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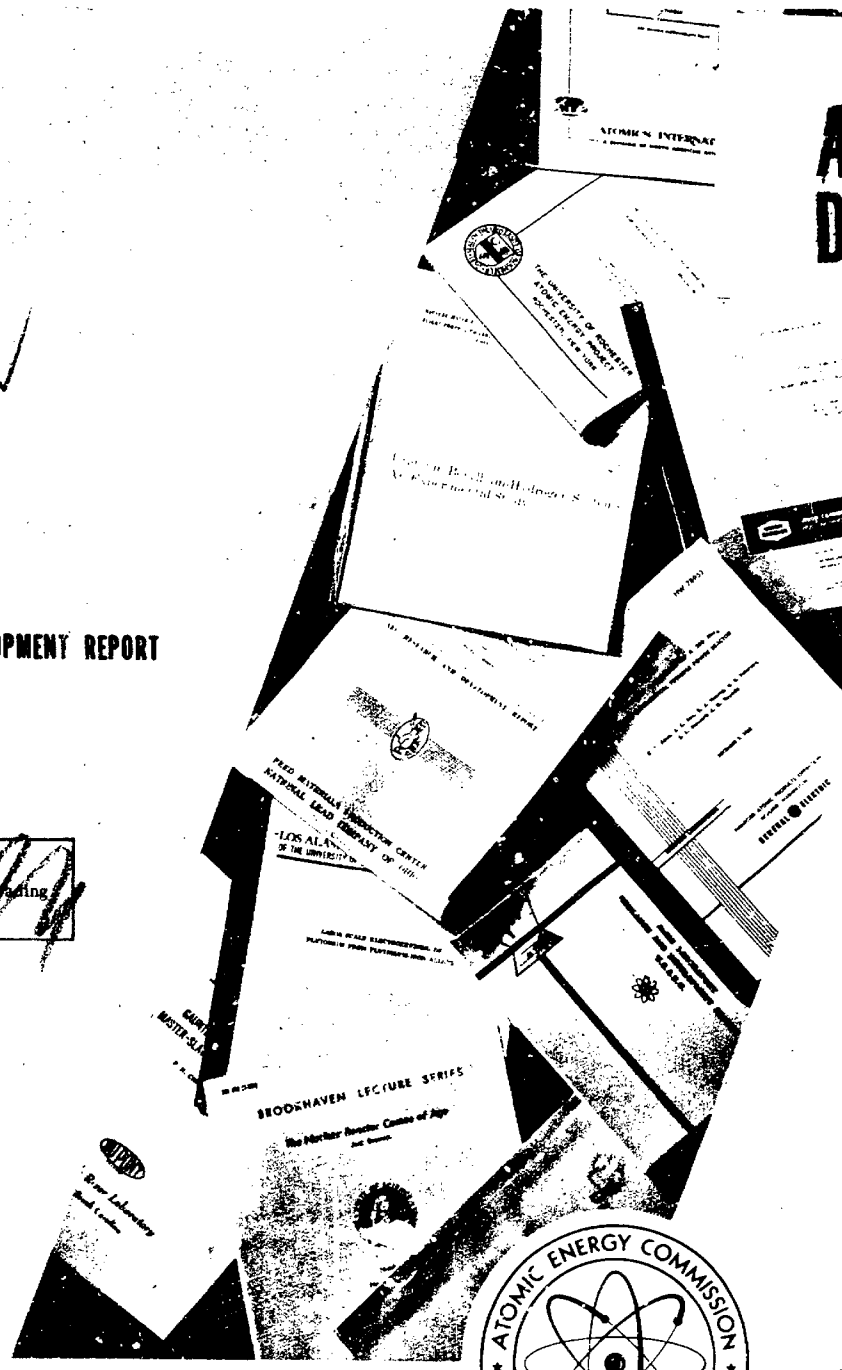

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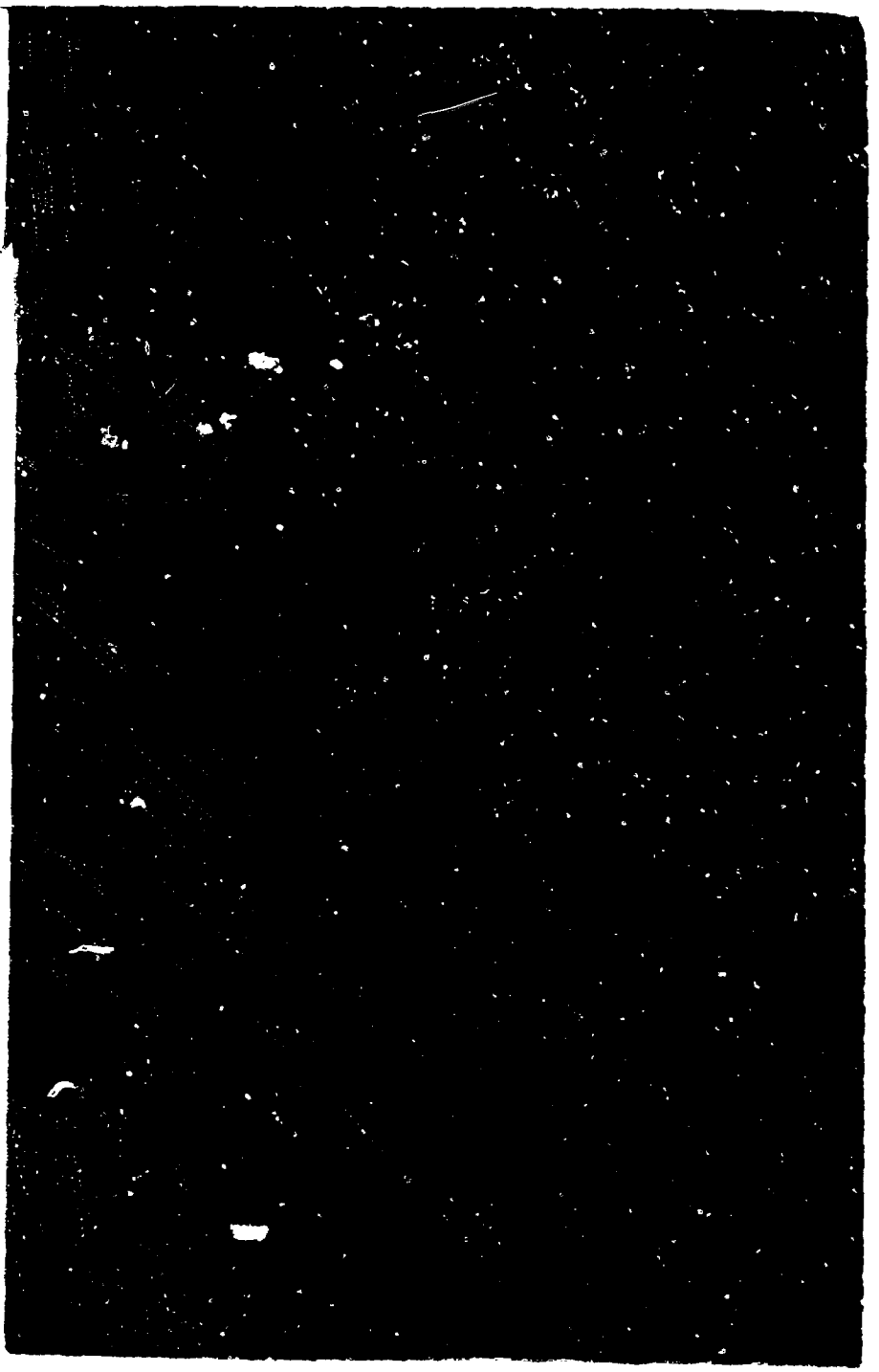

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(9) BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT.

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U.S.S. LCI's 327, 329, 332, 549

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APPROVED:

F.X. Forest,
Captain, U.S.N.

[redacted]

USS LCI's 327, 329, 332, 549

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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

[redacted]

USS LCI 327

U.S.S. LCI 327

SHIP CHARACTERISTICS

Building Yard: Brown Shipbuilding Co., Houston, Texas.

Commissioned: 31 October 1942.

HULL

Length Overall: 158 feet 6 inches.
Length on Waterline: 153 feet 0 inches.
Beam (extreme): 23 feet 8 inches.
Drafts at time of test: Fwd. 4 feet 6 inches.
Aft. 6 feet 0 inches.
Limiting displacement: 387 tons.
Displacement at time of test: 355 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, 6051, series 71. One per main shaft.
Reduction Gears: General Motors - Single reduction. One per shaft.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Two diesel - 20 KW.- 120 volts - D.C. units are installed.

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

None.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Heat has caused slight blistering of paint on surfaces directly exposed.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

Blast has caused slight dishing of light plating on hatch companionways and damage to sun shields on ready service boxes A few awning stanchions have carried away.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical, and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before Test A was operated after the test, and functioned normally. Damage to electrical equipment had no effect on ship control. There is no electric propulsion on the vessel.

(b) Effect on gunnery and fire control.

Damage to electrical equipment had no effect on gunnery or on fire control.

(c) Effect on water-tight integrity and stability

None.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary of Observers' Impressions and Conclusions.

This vessel was outside the effective range of the explosion during Test A.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage

None.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Heat has caused slight blistering of paint on surfaces directly exposed.

(b) Fires and explosions

None.

(c) Shock.

None.

(d) Pressure.

Blast has caused slight dishing of light plating on hatch companionways and damage to sun shields on ready service boxes. A few

awning stanchions have carried away.

(c) Effects peculiar to the Atomic Bomb.

None.

II. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability

None.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

No comment.

V. Recommendations.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Diesel oil	95%

ITEM	LOADING
Ammunition	0%
Potable and reserve feed water	96%
Salt water ballast	0%

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

DETAILED DESCRIPTION OF HULL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

A. General Description of Hull Damage.

Damage is negligible and is limited to ready service box sun shields, companionway hatches, and awning stanchions.

B. Superstructure.

A few awning stanchions are carried away (Photo. 1663-9, page 22). The sides of #1, 2 and 3 companionway hatches are dished slightly, the maximum dishing being about 1". The sun shields on the two 20mm ready service boxes, frames 20 and 80, port, were slightly buckled. The yoke flag is badly torn. Damage was caused by blast.

T. Coverings.

Paint is slightly blistered on the port side.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Any effects apparently peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before Test "A" was operated after the test, and functioned normally.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary of Observer's Impressions and Conclusions.

This vessel was outside the effective range of the explosion during Test "A".

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; lists; general areas of flooding, sources.

The drafts and the lists were not observed. There was no flooding.

(b) Structural damage.

Not observed.

(c) Other damage.

There was no damage to any electrical equipment on the vessel.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Radiant heat from the blast blistered and blackened paint work where directly exposed.

(b) Fires and explosions.

There were no fires and no explosions on the vessel.

(c) Shock.

No sign of shock were found in any electrical equipment.

(d) Pressure.

No indication of pressure was found in any electrical equipment.

(e) Any effects apparently peculiar to the Atom Bomb.

The radiant heat was the only effect noted as being peculiar to the Atom Bomb.

III. Effects of Damage.

(a) Effect on electric propulsion and ship control.

Damage to electrical equipment had no effect on ship control. There is no electric propulsion on the vessel.

(b) Effect on gunnery and fire control.

Damage to electrical equipment had no effect on gunnery or on fire control.

(c) Effect on watertight integrity and stability.

There was no effect on watertight integrity nor on stability caused by damage to electrical equipment.

(d) Effect on personnel and habitability.

Damage to electrical equipment would have had no effect on personnel nor on the habitability of the vessel.

(e) Total effect on fighting efficiency.

There would have been no effect on fighting efficiency caused by electrical damage.

IV. General Summary of Observer's Impressions and Conclusions.

A minor scorching effect due to the heat of the blast was the only blast effect noted. The vessel was well outside the radius of appreciable damage.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

Because of the lack of damage to electrical equipment, no recommendations are made.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

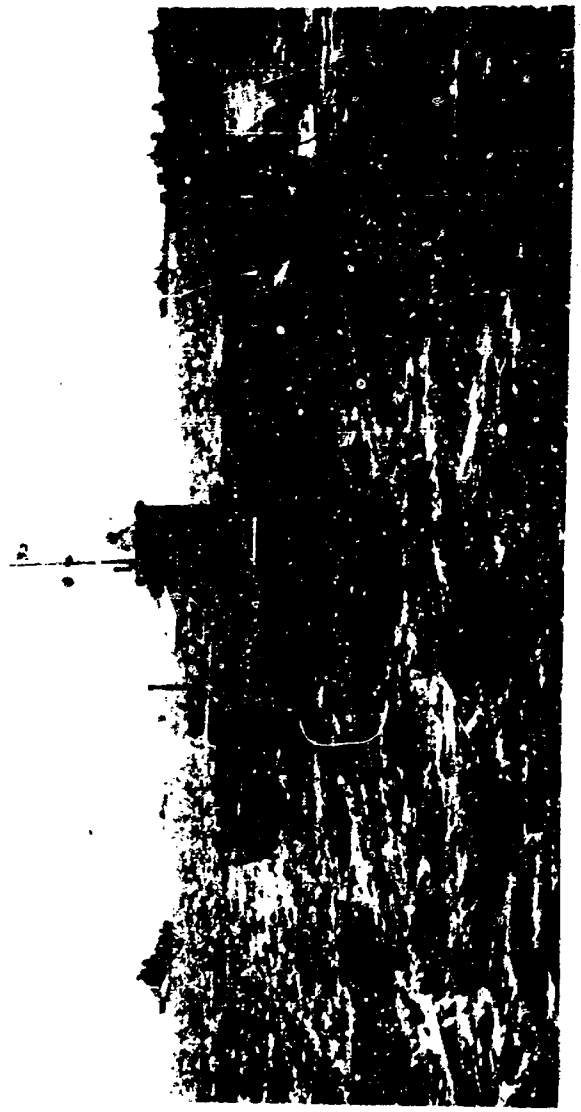
NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

SECTION IV

PHOTOGRAPHS

TEST ABLE



AA-CR-227-49-72. View from starboard bow after Test A.

AA-CR-227-49-68. View from port quarter after Test A.

AA-CR-81-1663-9. Awning stanchion carried away by effect of blast on awning.

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

REPORT # 11

COMMANDING OFFICERS REPORT

SECTION I

This is a report on the U.S.S. LCI(L) 327, which is a Landing Craft Infantry, Large of the 1 to 350 class. This vessel was located in berth 167 for test Able which is approximately 2500 yards due east of the U.S.S. NEVADA.

Prior to test Able the material condition of the ship was generally fair. The engines and machinery were in poor condition. The water-tight integrity of the ship is fair, but due to perforated bulkheads, worn knife edges, and rotted rubber gaskets it is believed that had we been damaged below the water line progressive flooding would have occurred. This is especially true in the forward part of the ship.

There was no solid loading on the ship. The liquid loading consisted of 100% capacity of fuel oil, and 95% capacity of fresh water. There were approximately 32,000 gallons of fuel oil on board, and approximately 8,500 gallons of fresh water. Special material on board consisted of deck compression gauges, personnel badges, casualty badges, casualty pills, samples of special clothing, goats and white rats.

There was very little damage suffered by this vessel due to test Able. The extent of the damage was dishing of hatch trunks to troop holds numbers 1, 2, and 4, located at frames 24, 37 and 82 respectively and scorching of paint on the port side of the con and deck house extending from frames 41 to 77. Had the ship been manned at the time of the blast it is believed that it would have been possible to maintain normal operations. However, some casualties to personnel would have been suffered such as burns and blindness, both permanent and temporary.

It is impossible, with the information available to me, to estimate the extent to which this vessel could be damaged by the Atomic bomb and remain afloat. There are no suggestions that could be offered by me as to improvements in design of this type vessel, as all suggestions that I could make have been incorporated in the newer 351 class of the LCI(L).

BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT

U.S.S. LCI 329

SHIP CHARACTERISTICS

Building Yard: Brown Shipbuilding Co., Houston, Texas.

Commissioned: 8 November 1942.

HULL

Length Overall: 158 feet 6 inches.
Length on Waterline: 153 feet 0 inches.
Beam (extreme): 23feet 8 incnes.
Drafts at time of test: Fwd. 4 feet 7 inches.
Aft. 6 feet 2 inches.
Limiting displacement: 387 Tons.
Displacement at time of test: 366 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, 6051, series 71. One per main shaft.
Reduction Gears: General Motors - Single reduction. One per shaft.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Two diesel - 20 KW.- D.C. units are installed.

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There is no flooding, hence no change in drafts or list.

(b) Structural damage.

The galley smoke pipe, which was badly rusted prior to the test, is torn loose from its base.

(c) Other damage.

None.

II. Effects Evidenced and Effects Noted.

(a) Heat.

There is slight scorching of some lines and the yoke flag.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

None.

(e) Effects peculiar to the atomic bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

MACHINERY

The test had no effect on the machinery of this vessel. All machinery that was operable before test A was operated after the test, and functioned normally. There was no electrical damage. There is no electric propulsion on the vessel.

(b) Effect on gunnery and fire control.

There was no electrical damage that would have any effect on gunnery and on fire control.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

This vessel was outside the effective range of the explosion during test A.

V. Recommendations.

None.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There is no flooding, hence no change in drafts or list.

(b) Structural damage.

The galley smoke pipe, which was badly rusted prior to the test, is torn loose from its base.

(c) Other damage.

Not observed.

II. Effects Evidenced and Effects Noted.

(a) Heat.

There is slight scorching of some lines and the yoke flag.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

Blast pressure has caused no damage. When the blowers were started after the test, soot which had been shaken loose from the ventilation ducts was blown into interior spaces.

(e) Effects peculiar to the Atomic Bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

No comment.

V. Recommendations.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Diesel oil	50%
Potable and reserve feed water	95%
Salt water ballast (side tanks frs. 27-57)	95%

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

DETAILED DESCRIPTION OF HULL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

A. General Description of Hull Damage.

There is no significant damage.

B. Superstructure.

The galley smoke pipe, which was badly rusted prior to the test, is torn loose from its base. There is slight scorching of some lines and the yoke flag.

E. Weather Deck.

Slight movement was recorded by the scratch gages installed to measure relative movement between the main and second deck as tabulated on page 43 .

M. Ventilation.

Dirt in the ventilation ducts was shaken loose by the blast pressure. When the systems were operated after the test, the dirt was blown into interior compartments.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Any effects apparently peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before Test "A" was operated after the test, and functioned normaily.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary of Observer's Impressions and Conclusions.

This vessel was outside the effective range of the explosion during Test "A".

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; lists; general areas of flooding, sources.

There drafts and the lists were not observed. There was no flooding.

(b) Structural damage.

Structural damage was not observed in detail, but none was noted on the inspection tour of the vessel.

(c) Other damage.

There was no damage whatever to any electrical equipment on the ship.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No effects of heat were seen in any electrical equipment. No signs of heat were noted on the inspection of the vessel.

(b) Fires and explosions.

There were no fires and no explosions on the vessel.

(c) Shock.

No evidence of shock was found in any electrical equipment.

(d) Pressure.

No evidence of pressure was noted in any electrical equipment.

(e) Any effects apparently peculiar to the Atom Bomb.

No effects peculiar to the Atom Bomb were found.

III. Effects of Damage.

(a) Effect on electric propulsion and ship control.

There was no electrical damage to have any effect on ship control. There is no electric propulsion on the vessel.

(b) Effect on gunnery and fire control.

There was no electrical damage that would have any effect on gunnery and on fire control.

(c) Effect on watertight integrity and stability.

There were no electrical failures to have any effect on the watertight integrity nor on the stability of the vessel.

(d) Effect on personnel and habitability.

The habitability of the vessel would not have been affected by electrical failures nor would such failures have had any effect on personnel.

(e) Total effect on fighting efficiency.

The fighting efficiency of the ship was not changed in any way by the effect of the bomb on electrical equipment.

IV. General Summary of Observer's Impressions and Conclusions.

There was no damage to any electrical equipment. No damage of any kind was found on the inspection tour of the vessel. The vessel was too far from the blast to be in itself affected, but the blast effect on personnel directly is unknown.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

No recommendations are made, as there was no damage.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

SECTION IV

PHOTOGRAPHS

TEST ABLE

AA-CR-227-49-75. View from port beam after Test A.

APPENDIX

SHIP MEASUREMENT DIAGRAM

TEST ABLE

SECRET

DECK DEFLECTION GAGES

SHIP LCI-329 TEST A

LOCATION			MAXIMUM	MINIMUM	PERMANENT SET		REMARKS
FR. NO.	DECK	DIST. OFF	COMP.	COMP.	DISTANCE	EXP. / COMP.	
16	2ND	CENTERLINE	0-0-3/16	NONE	NONE	NONE	NONE
23 1/2	"	"	NONE	"	"	"	"
31	"	"	0-0-1/4	"	"	"	"
69	"	"	0-0-1/16	"	"	"	"
93 1/2	"	"	0-0-3/16	"	"	"	"

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

REPORT # 11

COMMANDING OFFICERS REPORT

SECTION I

The USS LCI(L) 329 is one of the Landing Craft Infantry (Large) type ship. She is in the LCI(L) 1 class. She was located in the target array near Berth 168, which placed her east of the USS NEVADA, upwind, at a distance of nearly two miles. All the machinery aboard was not in its best operating condition prior to Test "A". One engine on the Port Quad was inoperative, both Fire and Bilge Pumps, the Port Generator, and the forward anchor winch were in like condition. Topside her condition was also not perfect. Minor structural damage had been sustained in a typhoon. Below decks her damage from the typhoon was greater. Many frames and bulkheads were broken and damaged on the port side amidship. This damage had all been repaired and the strength of the ship not believed to be badly impaired. The hull was in a good condition and thoroughly water-tight as far as our observations and soundings could determine. There were several leaks in the Engine Room but these were caused by corrosion of salt water outlet pipes. These have soft patches on them and cannot be repaired by ship's company at the present time. On a whole the ship was in a condition that was good to withstand, or at least resist, damage from the explosion within the limits of her light construction. Her condition to withstand damage of an inflammable nature on the weatherdecks was also good. Discounting the wooden pens, hay, and tarpaulins used for the test animals, inflammable material was negligible. As our ports do not have metal backings inside, fire may have started below decks if the explosive force had been strong enough at this point to shatter the glass. We do not have any watertight doors below decks except aft at after-steering and therefore the various compartments could not be completely isolated. We do have metal covered doors and these had been closed prior to our evacuation on A-1 day. The ship had been stripped of what inflammable material was not needed for our continued living aboard. Because of the above, I believe any fires started below decks would have been fairly localized. Within the ability of ship's company, this ship was in the best possible condition under the above circumstances to endure and remain afloat, Test ABLE and its resulting effects.

SECTION II

Upon returning aboard and during the days following no damage of any extent was found as a result of Test ABLE. The galley range exhaust had been unseated and was laying on the deck. It cannot be strongly secured on its base so a force need not be overly strong to unseat it. There was no evidence of scorched paint on the bow, forward bulwarks, or conning tower, all of which were exposed directly towards the blast. There was no evidence of dishing or distortion on the hull or superstructure as a result of the blast. There was practically no deck compression except on the gauge in troop compartment # 2, and even here it was slight. This may have been caused by the flexibility of the hull while underway from Pearl Harbor. There was some evidence of jarring in the ship for when the blowers were started upon returning aboard, soot was blown out into the compartments from the ventilation ducts. The galley was likewise covered with soot from the galley range exhaust pipes. There was not any damage done to the water-tight integrity of the hull in so far as we can determine from our inspections. The liquid loading in the tanks was unchanged and the bilges in the engine room, after-steering room, and the shaft alleys showed no evidence of split seams. Our electrical circuits were undamaged. All machinery operable before the test was operable afterwards. There was no shifting of their positions as determined by our measurements before and after. There was no evidence of damage to any electronic equipment aboard. All that was in a working condition prior to test "A" was the same after. The powder samples which had been placed in all the ready boxes on the weatherdecks and in the magazine showed no evidence of change. The ramps had been removed so was unable to see if their operation had been impaired by the blast. In view of the above, and in so far as I can ascertain, the ability of this ship to remain in action and maintain a working efficiency was unimpaired.

SECTION III

It is my opinion that the damage done aboard this ship was of such a minor nature that if in an operation under similar circumstances the ship could have successfully completed it. In regards to the crew, if they had been aboard at the time, it is difficult to say what condition they would be in or what efficiency they could maintain. Certainly in so far as injury to personnel due to the concussion wave and heat, it is my opinion that any injury would have been minor. Personnel topside I doubt would even have been knocked down as there were several light articles in the conning tower which showed no evidence of displacement. They would have undoubtedly been blinded from the flash if not forewarned in order to hide and cover their eyes. The hay for the goats was unscorched on the open forward deck, as was also other inflammable material in the liferafts, the signal halyards and an awning on the flag deck. In regards to the radioactivity dangers I cannot definitely ascertain what injury would have been sustained by the crew. I am sure that if any serious injuries had been caused it would have been from this danger. There is one interesting note in regards to this danger which I feel may be of some interest. Within a week after the blast, three wild rats were found dead aboard. These rats were undoubtedly secured below decks upon evacuation as they have never been seen during the day on the weatherdecks, though their presence was known aboard. Their bodies were not found upon returning by the inspection parties which open all compartments and holds. All three were found almost simultaneously and none bore any signs of violence. As we have no poison around the ship the cause of their deaths is unknown, but radioactivity during the test is suspected as the cause.

As I do not know the extent of the radiological activity during and following the test in this area, and not thoroughly understanding the effect on personnel exposed to it in varying degrees, I cannot say to what extent the crew could be considered casualties. Since we had no burning or flooding aboard as a result of the test, our delay in returning did not influence the extent of the damage due to the absence of personnel to combat it.

There is nothing I can say in regards to recommendations on modification of the construction of this type vessel due to the absence of any damage. Most all the poorer features of this class have been corrected in the subsequent two classes.

U.S.S. LCI 332

SHIP CHARACTERISTICS

Building Yard: Brown Shipbuilding Co., Houston Texas.

Commissioned: 17 November 1942.

HULL

Length Overall: 158 feet 6 inches.
Length on Waterline: 153 feet 0 inches.
Beam (extreme): 23 feet 8 inches.
Drafts at time of test: Fwd. 3 feet 3 inches.
Aft. 5 feet 3 inches.
Limiting Displacement: 387 tons.
Displacement at time of test: 271 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels. 8051, series 71. One per main shaft.
Reduction Gears: General Motors - Single reduction. One per shaft.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Two diesel - 20 KW. - 120 volt D.C. units are installed.

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

None.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

The paint on surfaces which were approximately normal to the burst was slightly scorched.

(b) Fires and explosions.

One halyard burned and ignited a canvas flag bag cover and a pillow, and scorched a wooden mast at the cleat to which it was secured.

(c) Shock.

None.

(d) Pressure.

The light plating around the forward and after companionway hatches is slightly dished. A locker was blown off of an exposed bulkhead. Pipe supports for awnings were bent. A small piece of wood was blown out of the mast.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before test A was operated after the test, and functioned normally. There was no electrical damage to affect ship control. The vessel does not have electric propulsion.

(b) Effect on gunnery and fire control.

There was no damage to electrical equipment to have effect on gunnery and fire control.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

Exposed personnel would probably have suffered flash burns. Habitability was not affected.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

This vessel was outside the effective range of the explosion during test A.

V. Recommendations.

None.

2

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. General Description of Hull Damage.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

None.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

The paint on surfaces which were approximately normal to the burst is slightly scorched.

(b) Fires and explosions.

One halyard burned and ignited a canvas flag bag cover and a pillow, and scorched a wooden mast at the cleat to which it was secured.

(c) Shock.

None.

(d) Pressure.

The light plating around the forward and after companionway hatches is slightly dished. A locker was blown off of an exposed bulkhead. Pipe supports for awnings are bent. A small piece of wood was blown out of the mast.

(e) Effects apparently peculiar to the Atom Bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and firecontrol.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

Exposed personnel would probably have suffered flash burns. Habitability was not affected.

(e) Effect on fighting efficency.

None.

IV. General Summary.

No comment.

V. Recommendations.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Fuel oil	
Diesel oil	10%
Ammunition	None.
Potable and reserve feed water	95%
Salt water ballast.	None.

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

DETAILED DESCRIPTION OF HULL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items committed either received no damage or are not applicable.

A. General Description of Hull Damage.

Damage is limited to topside light plating and pipe for securing awnings. One small fire burned a halyard and ignited the canvas flag bag cover. Fire was caused by radiated heat, other damage by blast. Paint is blistered.

B. Superstructure.

The forward and after companionway hatches are dished slightly. A wooden locker at frame 40, centerline, was blown from the bulkhead. One wind scoop for an air port at frame 65, starboard, was torn off. An apparently rotten 6" x 6" x 1" piece was blown out of the wooden mast. A 1 1/2 inch pipe used as a longitudinal support for the main deck awning sagged twelve inches. Two 1 inch pipes used for longitudinal support of upper deck awnings sagged eight inches. This damage was caused by blast. One halyard burned and ignited a canvas flag bag cover and a pillow, and scorched a wooden mast at the cleat to which it was secured.

E. Weather Deck.

Locations and recordings of five scratch gages which were installed to measure relative movement between the main and second deck are tabulated on page 68).

T. Coverings.

Painted surfaces nearly normal to the burst blistered. There is no blistering aft of frame 70. Where two coats of paint had been applied only the top coat was blistered.

(e) Any effects apparently peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before Test "A" was operated after the test, and functioned normally.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary of Observer's Impressions and Conclusions.

This vessel was outside the effective range of the explosion during Test "A".

V. Any Preliminary General or Specific Recommendations of the Inspecting Group!

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

The drafts and the lists were not observed. There was no flooding.

(b) Structural damage.

Not observed.

(c) Other damage.

There was no damage whatever to electrical equipment.

II. Forces Evidenced and Effects Noted.

(a) Heat.

Radiant heat moderately charred and blistered paint work exposed.

(b) Fires and explosions.

One small fire was started by a burning halyard. There were no explosions.

(c) Shock.

No effects of shock were found in any electrical equipment.

(d) Pressure.

No effects of pressure were found in any electrical equipment.

(e) Any effects apparently peculiar to the Atom Bomb.

Radiant heat was the only effect peculiar to the Atom Bomb noted.

III. Effects of Damage.

(a) Effect on electric propulsion and ship control.

There was no electrical damage to affect ship control. The vessel does not have electric propulsion.

(b) Effect on gunnery and fire control.

There was no damage to electrical equipment to have effect on gunnery and fire control.

(c) Effect on watertight integrity and stability.

Failures of electrical gear had no effect on watertight integrity nor on stability.

(d) Effect on personnel and habitability.

Failures of electrical equipment would have had no effect on personnel.

(e) Total effect on fighting efficiency.

There were no electrical failures to cause any effect on fighting efficiency of the vessel.

IV. General Summary of Observer's Impressions and Conclusions.

No electrical equipment was damaged by the blast. Negligible heating effects and pressure effects were the only damage whatever noted as the result of the blast.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

As there was no damage, no recommendations are made.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

SECTION IV

PHOTOGRAPHS

TEST ABLE

AA-CR-227-49-59. View from port bow after Test A.

AA-CR-227-49-63. View from starboard quarter after Test A.

APPENDIX

SHIP MEASUREMENT DIAGRAM

TEST ABLE

DECK DEFLECTION GAGES

SHIP LCI 332 TEST A

LOCATION			MAXIMUM	MAXIMUM	PERMANENT SET		
FR. NO.	DECK	DIST. OFF ℄	COMP.	EXP.	DISTANCE	EXP./COMP.	REMARKS
16	2nd	Center-line	0-0-7/16	None	none	none	none
24	2nd	Center-line	none	none	none	none	none
31	2nd	Center-line	0-0-1/2	none	none	none	none
88 1/2	2nd	Center-line	none	0-0-11/16	none	none	none
93 1/2	2nd	Center-line	none	none	none	none	none

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

REPORT # 11

COMMANDING OFFICERS REPORT

SECTION I

The U.S.S. LCI(L) 332 was anchored on a bearing of 089.5 degrees true at a distance of two thousand (2000) yards from the U.S.S. NEVADA during Test A. Peculiar to normal anchoring procedure, LCI 332 was riding her stern anchor with her bow anchor underfoot; thereby being headed into the blast.

All machinery was secured prior to evacuation. The port sea chest valve, supplying the fire main and flushing system, was left open. All other valves were secured.

The ten percent ammunition allowance was distributed on a ten percent basis in eight (8) topside ready service boxe and the magazine located aft on the second deck, starboard side. Ten percent fuel allowance was distributed in three service tanks amidships extending across the entire beam of the ship. No gasoline was on board.

All ports, doors and hatches were secured.

No leaks below the water-line were detected prior to test A.

No special test equipment had been placed on board.

SECTION II

Observed drafts had not changed after Test A No structural damage was sustained. Operation of the ship was in no way impaired.

SECTION III

Blistering of paint work indicates that the heat wave struck the ship from about five degrees off the starboard bow. Paint work was blistered approximately two (2) feet aft on the port bow and four (4) feet aft on the starboard bow. Vertical surfaces on the forecastle deck show blistered paint. Unprotected main deck hatches forward have blistered paint. Forward bulkhead of the superstructure above area protected by main deck installations was blistered. Paint work on the starboard side of the superstructure was blistered aft for eight (8) feet. All surfaces (welds,etc.) projecting at ninety (90) degrees to the superstructure's starboard bulkhead show blistered paint work. No blistering occurred aft of frame 70. Where two coats of paint had been applied only the top coat blistered. Only surfaces at ninety, or near ninety, degrees to the heat wave were blistered. Protective surfaces at distances of twenty (20) feet were sufficient to prevent blistering.

One halyard burned. It, in turn, ignited a canvas flag board covering and pillow and scorched a wooden mast at the cleat to which it has been secured. All other halyards were badly frayed where not protected but none were burned. No other fires or explosions occurred throughout the ship.

One wooden topside locker, three cubic feet capacity, located at frame 40 amidships was blown from the bulkhead. One vent for an air port at frame 65 starboard side was fifty (50) percent torn off. Same type vent at frame 59 starboard side was undisturbed. An apparently rotten 6"x6"x1" piece of the wooden mast was blown out. There was no movement of machinery on its foundations. No joint failures occured. Test gear did not disclose any permanent deck deformations.

A one and one-half (1 1/2) inch longitudinal pipe, used as support for main deck awning, sagged twelve (12) inches, indicating that the pressure change was so instantaneous that there was no pressure equalization above and below the awning. Two one (1) inch longitudinal pipes, used for support of gun deck awning sagged eight (8) inches. No light bulbs, air ports, etc., were broken.

SECTION IV

Main engines, auxiliaries and other ship controls suffered no damage.

The explosions produced no hull openings and had no effect on stability.

Personnel having battle stations on No. 1 gun and in the conn would have been exposed to intense heat. Personnel stationed in other locations, in all probability, would have sustained no injuries.

The fighting efficiency of the ship was in no way impaired. All damage sustained is considered negligible.

U.S.S. LCI 549

SHIP CHARACTERISTICS

Building Yard: New Jersey S.B. Corp., Barber, N.J.

Commissioned: 26 January 1944.

HULL

Length Overall: 159 feet 0 inches.
Length on Waterline: 153 feet 0 inches.
Beam (extreme): 23 feet 8 inches.
Drafts at time of test: Fwd. 4 feet 0 inches.
Aft. 6 feet 3 inches.
Limiting displacement; 387 tons.
Displacement at time of test: 346 tons.

MAIN PROPULSION PLANT

Main Engines: Two General Motors Diesels, 6051, series 71. One per main shaft.
Reduction Gears: General Motors - Single reduction. One per shaft.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Two diesels - 20 KW.- 120 volts - D.C. units are installed.

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

No damage.

(c) Other damage.

None.

II. Forces Evidenced and Effects Noted.

(a) Heat.

None.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

None.

(e) Effects peculiar to the atomic bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

MACHINERY

The test had no effect on the machinery of this vessel. All machinery that was operable before test A was operated after the test, and functioned normally. There was no effect on ship control. The vessel does not have electric propulsion.

(b) Effect on gunnery and fire control.

There was no effect on gunnery and fire control.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

This vessel was outside the effective range of the explosion during test A.

V. Recommendations.

None.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

(b) Structural damage.

No damage.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

None.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

None.

(e) Effects peculiar to the Atomic Bomb.

None.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

None.

IV. General Summary.

No comment.

V. Recommendations.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Diesel oil	50%
Ammunition	0%

ITEM	LOADING
Potable and reserve feed water	95%
Salt water ballast ([illegible] tanks frs. 27-57)	95%

Details of the s[illegible] quantities of the various items aboard are included in Repor[illegible]ity Inspection Report, submitted by the ship's force in accord[illegible] "Instructions to Target Vessels for Tests and Observations b[illegible] Force" issued by the Director of Ships Material. This report is [illegible]ailable for inspection in the Bureau of Ships Crossroads Files.

DETAILED DESCRIPTION OF HULL DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

E. Weather Deck.

No movement was recorded by any of the five scratches gages installed to record relative movement between the main and second deck.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

No comment.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Any effects apparently peculiar to the Atom Bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

The test had no effect on the machinery of this vessel. All machinery that was operable before Test "A" was operated after the test, and functioned normally.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None.

(e) Total effect on fighting efficiency.

None.

IV. General Summary of Observer's Impressions and Conclusions.

This vessel was outside the effective range of the explosion during Test "A".

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; lists; general areas of flooding, sources.

The drafts and the lists were not observed. There was no flooding.

(b) Structural damage.

Not observed.

(c) Other damage.

There was no damage whatever to any electrical equipment.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat on the vessel.

(b) Fires and explosions.

There were no fires and no explosions on the vessel.

(c) Shock.

No evidence of shock was found in electrical equipment.

(d) Pressure.

No evidence of pressure was found in any electrical equipment.

(e) Any effects apparently peculiar to the Atom Bomb.

No effects peculiar to the Atom Bomb were found on the vessel.

III. Effects of Damage.

(a) Effect on electric propulsion and ship control.

There was no effect on ship control. The vessel does not have electric propulsion.

(b) Effect on gunnery and fire control.

There was no effect on gunnery and fire control.

(c) Effect on watertight integrity and stability.

There was no effect on watertight integrity, nor on stability.

(d) Effect on personnel and habitability.

There was no effect on the personnel, nor on the habitability of the vessel.

(e) Total effect on fighting efficiency.

The fighting efficiency of the vessel was unchanged by the bomb.

IV. General Summary of Observer's Impressions and Conclusions.

The bomb caused no damage whatever on the vessel. The ship was well outside the effective range of the bomb.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

No recommendations are made as there was no damage whatever.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

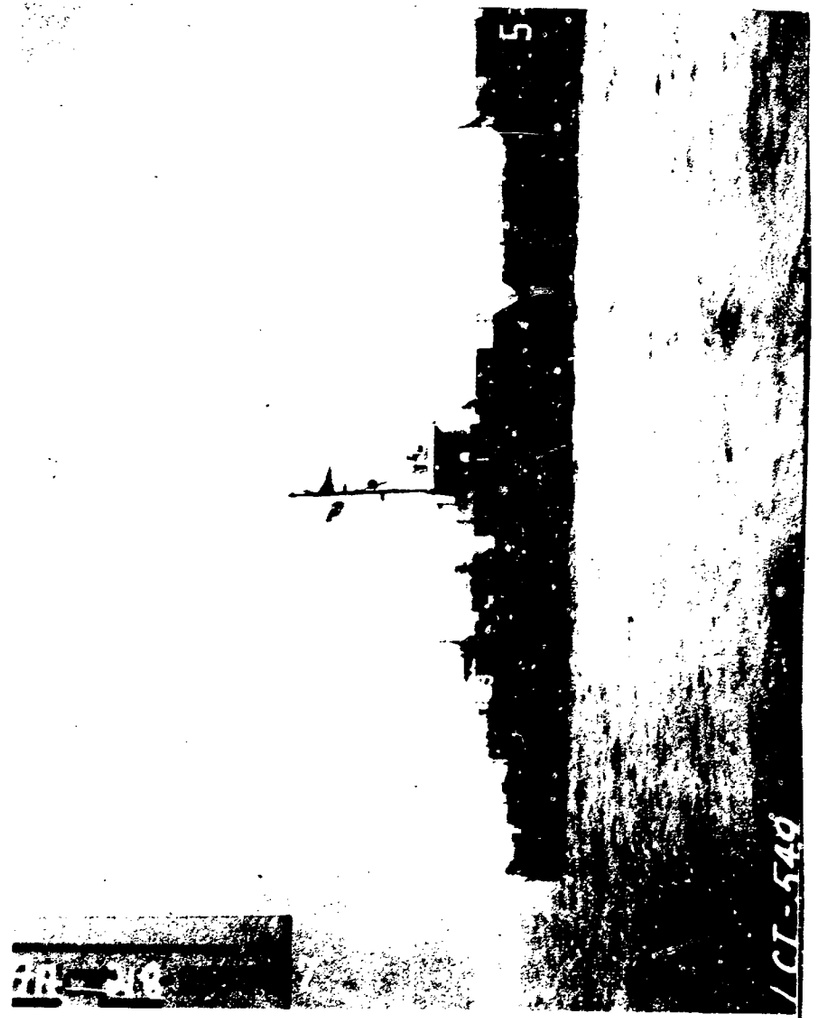
NOTE: The only items discussed below are those where damage occurred. All items omitted either received no damage or are not applicable.

There was no damage.

SECTION IV

PHOTOGRAPHS

TEST ABLE



AA-CR-218-2586-7. View from starboard beam after Test A.

SECRET

APPENDIX

COMMANDING OFFICERS REPORT

TEST ABLE

SECRET

REPORT # 11

COMMANDING OFFICERS REPORT

SECTION I

This is a report on the U.S.S. LCI(L) 549, which is a Landing Craft Infantry, Large, of the LCI(L) 351 class. This vessel was located in anchorage #169 for the Able test, which is approximately 4000 yards due east of the U.S.S. NEVADA.

Prior to the test the ship was in good condition. All engines and machinery were in working order. The knife edges on the weather deck water-tight doors were worn, however, and did not give a perfect seal. In case of a fire, this may have allowed inside spreading. This would only affect the deck house though, because the forecastle and #1 compartment are already open to the outside by the hause-pipe.

There was no solid loading on the ship and the liquid loading consisted in 50% diesel oil for the main engines, and near 100% fresh water capacity as practical; actually there were 11,000 gallons aboard (13,000) maximum. One sea chest valve on the port side was left open. Other than deck-compression gauges, there were no special materials aboard for the test.

There was no damage of any nature whatsoever suffered by this vessel due to the test, with the exception of a shaken Charlie Noble, which put soot all over the galley deck. I think that had this vessel been manned at the time, all personnel would have survived, and the ship would not have been hampered in her normal operations (assuming that precautions had been taken against the brilliance of the bomb burst). In the Able test, she rolled about 8° both ways.

At the distance this ship was placed from the center of the blast, it is hard to determine exactly how much damage she could sustain from an Atomic Bomb, and survive. If close to a blast, the chances of her continuing operating are greatly diminished for the following reasons:

The design of these vessels included little or no water-tight integrity; the hull plates are very light; she has a very high freeboard amidships; her wooden mast could easily start a fire that might mean disaster; there is very little longitudinal compartmentation to strengthen her; her gasoline-driven stern winch is completely open and the bow winch is in the open forecastle.

If the above were redesigned and improved, the ability of an LCI to stay afloat would be greatly improved, in the face of an Atomic Bomb. In her present condition, if damage of any extent at all were suffered, it is not believed by this command that she could remain afloat. This is especially true in regards to flooding; for fire, she would have a better chance.

Since none of the six target LCI's suffered much damage during the past test, because of their distance from the center of the array, it is suggested that some be moved closer so as to determine what effects the next bomb would have on them.

[redacted]

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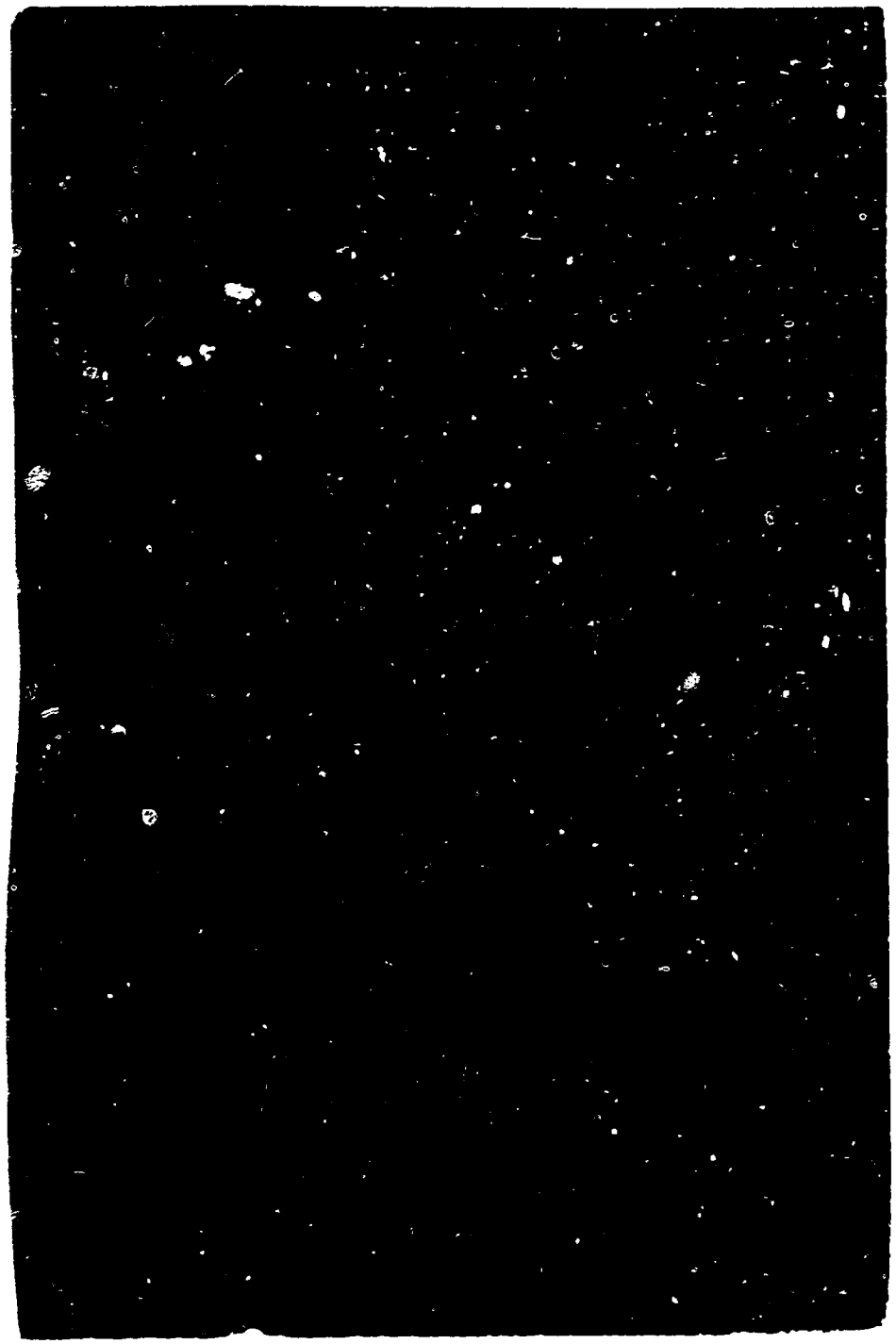

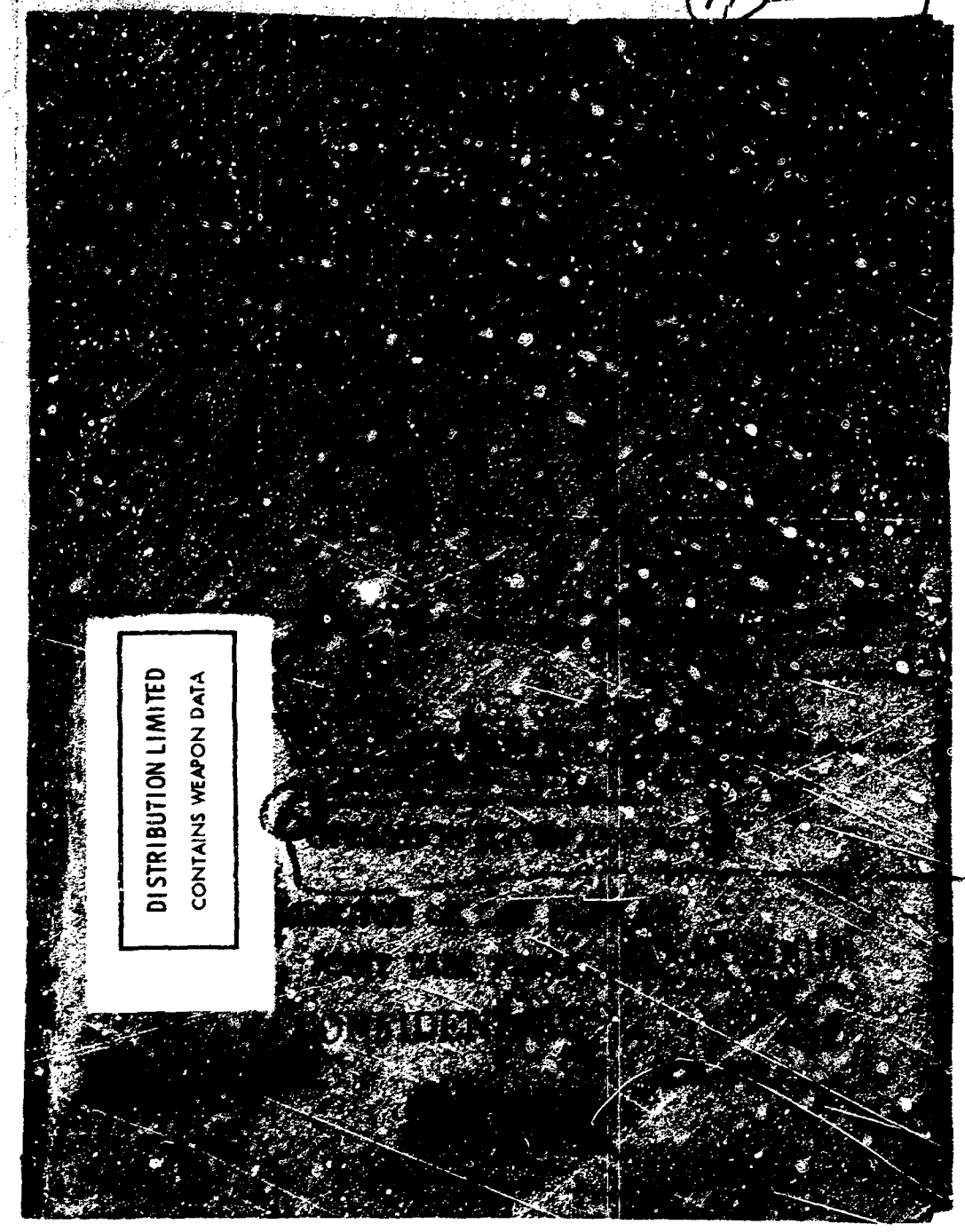
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By authority of JOINT CHIEFS OF STAFF JCS 1796/36 DATED 15 APRIL 1948
By [redacted] Date MAY 16 1952

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APPROVED:

F.X. Forest,
Captain, U.S.N.

[redacted]

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USS PRINZ EUGEN (IX300)

Page 1 of 54 Pages

RESTRICTED DATA
ATOMIC ENERGY ACT 1946

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USS PRINZ EUGEN (IX300)

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Atomic Energy Act 1946

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EX GERMAN CRUISER PRINZ EUGEN

SHIPS CHARACTERISTICS

Completed: 1940

HULL

Length Overall: 723 feet 0 inches
Beam (extreme): 71 feet 0 inches.
Depth (to main deck): 26 feet 0 inches.
Drafts at time of test: Fwd. 17 feet 10 inches.
Aft. 24 feet 3 inches.
Standard displacement: 10,000 tons.
Displacement at time of test: 16,230 tons.

MAIN PROPULSION PLANT

Main Engines: Three complete sets of main turbines are installed, one complete set per shaft. Each set consists of a high, intermediate and low pressure turbine. Astern turbines are installed in the casings of the main I.P. and L.P. turbines. Mfg. by Krupp in Germany.
Main Reduction Gears: Single reduction, three complete sets.
Boilers: Twelve main units, and one auxiliary unit are installed in the ship. Type: Lamont forced circulation. Mfg. by F. Krupp, Germaniawerft, Germany.
Main condensers: Three installed in ship. Mfg by F. Krupp, Germaniawerft, Germany.
Shafting: Three main shafts are installed in ship. Line shaft O.D. = 18.2", I.D. = 12.2".
Propellers; Three installed in ship. 3 blades mfg. by F. Krupp, Germaniawerft, Germany.
Turbo Generators; Six turbo generators, and four diesel generators are installed in the ship. There are generator rooms.

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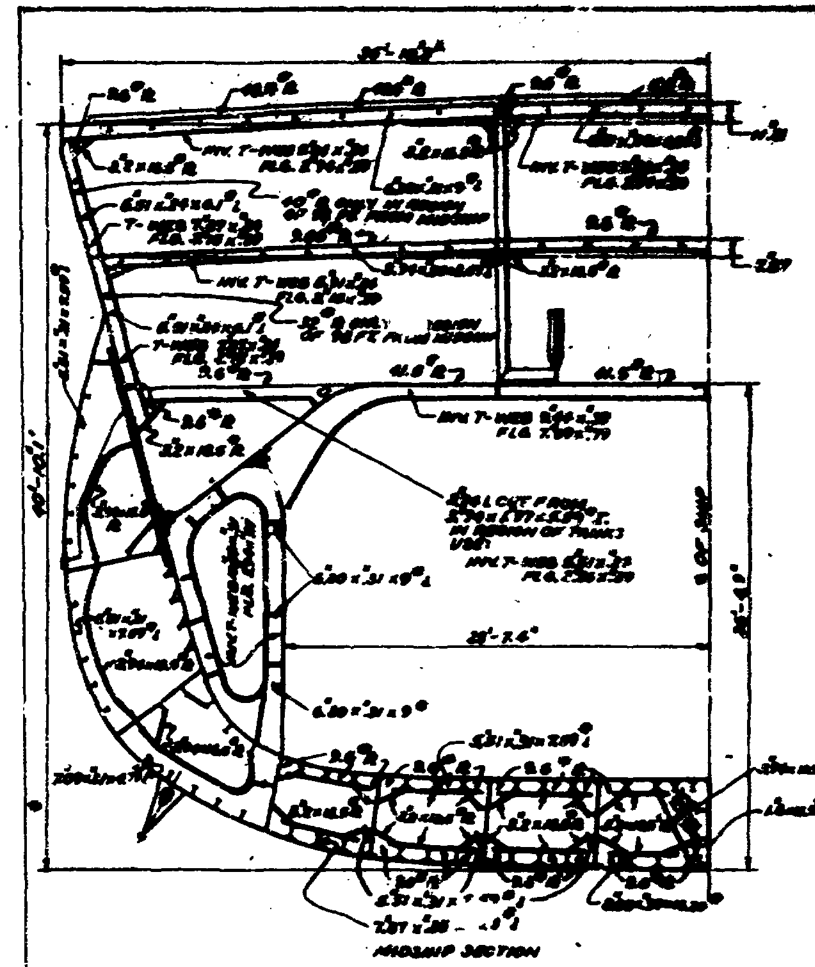


MIDSHIP SECTION

TEST B

PRINZ EUGEN (IX300)

OVERALL SUMMARY

1. [illegible] Condition After Test.

(a) Results after test, general areas of flooding, sources.

	Draft Forward	Draft Aft	List
Before Test	17' 6"	24' 6"	0°
After Test	17' 6"	24' 6"	1 1/2° starboard.

Tank number 9, just forward of the boiler room, has flooded through a sea valve that has apparently been jarred open. There is some water in the steering Engine Room, and Generator Rooms 1 and 3. This water is due to normal seepage around the rudder post through sea valves.

Generator room #1 and the after engine room were flooded to a depth of about 3 1/2 feet, generator room #3 was flooded to a depth of about 2 1/2 feet. Twenty-two electric motors were grounded out by this flooding, which is not considered to have been caused by Test B. The ship had a list of about 1 1/2° to starboard after Test B.

(b) Structural damage.

HULL

No known or detectable damage to structure has resulted from this test.

MACHINERY

No comment.

ELECTRICAL

None observed.

(f) Other devices.

HULL

Twenty seven electric motors have been grounded in the After Engine Room and Generator Room 1 and 2 as a result of seepage at what is considered to be a normal rate for this ship.

MACHINERY

There was no damage to machinery of this vessel during Test B. A number of auxiliaries were operated after the test.

ELECTRICAL

Twenty seven electric motors were grounded as a result of the flooding. There was no other electrical damage reported.

II. Forces Evidenced and Effects Noted.

(a) Heat

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of fires or explosions.

(b) Fires and Explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of fires or explosions.

(c) Shock.

HULL

The sea valve in tank number 8 has apparently been jarred open. This is the only evidence of shock aboard the ship.

MACHINERY

No evidence in machinery spaces.

ELECTRICAL

There was no evidence of shock.

(d) Pressure

HULL

There is no evidence of pressure.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of pressure on electrical equipment.

(e) Effects peculiar to the Atom Bomb.

HULL

The only effects peculiar to the atom bomb is the presence of radioactivity.

MACHINERY

None.

ELECTRICAL

There were no effects noted that are considered peculiar to the Atomic Bomb except radioactivity.

III. Effects of damage.

(a) Effect on machinery, electrical, and ship control.

HULL

No comment.

MACHINERY

None.

ELECTRICAL

There was no effect on electrical equipment or ship control except as a result of the flooding due to normal leakage.

(b) Effect on gunnery and fire control.

HULL

No comment.

MACHINERY

No comment.

ELECTRICAL

None.

(c) Effect on watertight integrity and stability

HULL

The ship has assumed a list of 1 1/2 degrees to starboard, primarily due to flooding of tank number 9.

The watertight integrity is unimpaired.

MACHINERY

No comment.

ELECTRICAL

None.

(d) Effect on personnel and habitability.

HULL

The immediate effect on personnel would have been slight except for the psychological factors pertaining to an atomic bomb attack. Some casualties might have appeared later.

Habitability of spaces is not impaired at present, but transmission of radioactive material from the weather deck to other spaces is a hazard.

MACHINERY

None below decks except for radioactivity.

ELECTRICAL

There was no effect on personnel or habitability as a result of this test except for radioactivity. It is considered, however, that personnel would have been seriously affected by the radioactivity. This is evidenced by the fact that the vessel was declared unsafe for personnel more than three weeks after the bomb explosion had occurred.

(e) Total effect on fighting efficiency.

HULL

The total effect on fighting efficiency is slight except for the presence of radioactivity.

MACHINERY

None, except for possible effects of radioactivity.

ELECTRICAL

Providing there were no personnel casualties due to radiological effects, it is considered that there would have been no effect on the fighting efficiency of the vessel.

IV. General Summary of Observer's Impressions and Conclusions.

HULL

An atomic bomb attack of this type at this range is not capable of inflicting structural damage. The ship, however, is within the range of dangerous radioactivity.

MACHINERY

The PRINZ EUGEN was outside the effective range of the explosion during Test B, except for possible effects of radioactivity.

ELECTRICAL

The distance of this vessel from the center of the [illegible] is considered to be too great for electrical damage to result.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

HULL

Topside personnel should be entirely enclosed wherever possible.

MACHINERY

None.

ELECTRICAL

None.

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding sources.

	Draft Forward	Draft Aft	List
Before Test	17' 6"	24' 6"	0°
After test	17' 6"	24' 6"	1-1/2° Stbd.

Tank number 9, just forward of the boiler room, has flooded through a sea valve that has apparently been jarred open. There is some water in the Steering Engine Room, and Generator Rooms 1 and 3. This water is due to normal seepage around the rudder post and through sea valves.

(b) Structura damage.

No known or detectable damage to structure has resulted from this test.

(c) Other damage.

Twenty seven electric motors have been grounded in the After Engine Room and Generator Rooms 1 and 3 as the result of seepage at what is considered to be a normal rate for this ship.

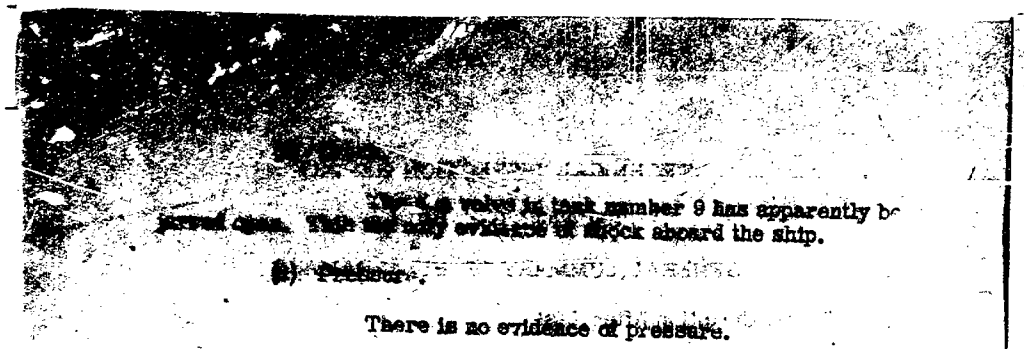
II. Forces Evidenced and Effects Noted.

(a) Heat.

None.

(b) Fires and explosions.

None.



The [illegible] valve in tank number 9 has apparently been [illegible]. This was the only evidence of shock aboard the ship.

(b) Pressure.

There is no evidence of pressure.

(c) Effects apparently peculiar to the atom bomb.

The only effect peculiar to the atom bomb is the presence of radioactivity.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

No comment.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

The ship has assumed a list of 1-1/2 degrees to starboard, primarily due to flooding of tank number 9.

The water-tight integrity is unimpaired.

(d) Effect on personnel and habitability.

The immediate effect on personnel would have been slight except for the psychological factors pertaining to an atomic bomb attack. Some casualties might have appeared later.

Habitability of spaces is not impaired at present, but transmission of radioactive material from the weather deck to other spaces is a hazard.

(e) Effect on fighting efficiency.

The total effect on fighting efficiency is slight except for the presence of radioactivity.

IV. General Summary of Observers' Impressions and Conclusions.

An atomic bomb attack of this type at this range is not capable of inflicting structural damage. The ship, however, is within the range of dangerous radioactivity.

V. Preliminary General or Specific Recommendations of the Inspecting Group.

Topside personnel should be entirely enclosed wherever possible.

VI. Instructions for loading the vessel specified the following.

ITEM	LOADING
Fuel Oil	50%
Diesel Oil	50%
Ammunition	100%
Potable and reserve feed water	95%
Salt water ballast	None.

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

(a) Overall condition.

The vessel has suffered only very minor damage.

(b) General areas of hull damage.

No known or detectable damage to structure has resulted from this test.

(c) Apparent causes of hull damage.

Not Applicable.

(d) Flooding.

Number 9 tank, just forward of the boiler room has flooded completely through a flooding valve which apparently was forced open.

Generator rooms No. 1 and 3 have 3-1/2 and 2-1/2 feet of water respectively as the result of seepage through sea valves and around valve stems and pipe joints.

The after engine room has similar seepage.

The steering engine room has one inch of water from seepage around the rudder post.

(e) Residual strength, buoyancy, and effect of general condition of hull on operability.

Residual strength and operability are unaffected.

There is not enough flooding to make any detectable difference in drafts. If the ship had been manned, flooding would have been entirely controlled.

B. Superstructure, including of gun-mounts.

No damage.

C. Turrets, Guns and Directors.

(a) Protected Mounts.

1. General condition, including operability, if known.

No damage.

2. Effectiveness of installed turrets or shields.

Satisfactory.

(b) Unprotected Mounts.

1. General condition, including operability, if known.

No damage.

Operability unknown.

2. Effectiveness and sufficiency of crew shelters.

Shields are unaffected but do not provide adequate protection for the crew from radioactivity.

(c) Directors and Rangefinders (in 3" turrets).

1. General condition, including operability, if known.

No damage.

Operability unknown.

2. Condition of instruments therein.

Satisfactory.

(d) Constructive criticism of design or construction of mounts, directors, foundations and shelters.

No comment.

D. Torpedo Mounts, Depth Charge Gear.

(a) Torpedo Mounts.

No damage.

(b) Depth Charge Gear.

Not Applicable.

E. Weather Deck.

There is no visible damage and none of the six deflection gauges located beneath the deck have recorded any derlecti[on].

F. Exterior Hull (above w.l.).

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

No damage.

I. Interior Compartments (below w.l.).

(a) Damage to structure and causes.

No damage.

(b) Damage to joiner bulkheads and causes.

No damage.

(c) Details of damage to access closures and causes.

No damage.

(d) Condition of equipment within compartments.

Twenty-seven electric motors have been grounded in the after engine room and generator rooms 1 and 3. This is due to flooding from what is considered a normal rate of seepage for this ship.

(e) Flooding.

Tank No. 9 has flooded completely through a flooding valve that has apparently been jarred open.

No. 1 generator room has flooded to a depth of 3-1/2 feet by seepage through sea valves.

Number 3 generator room and the after engine room have similar flooding to depths of 2-1/2 and 3 feet, respectively.

The steering engine room has three feet of water in the sump and one inch of water on the deck. This is from seepage around the rudder post.

All seepage is considered to be at a normal rate for this ship, so flooding of tank No. 9 is the only flooding that can be considered due to the test.

(f) Damage in way of piping, cables, ventilation ducts, shafts.

No damage.

(g) Estimate of reduction in water-tight subdivision, habitability, and utility of spaces.

The only reduction in habitability and utility of spaces is caused by the flooding from the normal seepage.

J. Underwater Hull.

No apparent damage.

K. Tanks.

(a) Condition of tanks in way of damage.

Tanks are undamaged but tank Number 9 has flooded through a sea valve that has apparently been forced open. This tank has been pumped dry prior to the test.

(b) Contamination of liquids.

None.

(c) Damage (known or suspected), to torpedo defense system.

None.

L. Flooding.

(a) Description of major flooding areas.

Areas with flooding are the steering engine room, after engine room, generator rooms 1 and 3, and tank No. 9.

(b) Sources of flooding.

Water in the steering engine room is the result of seepage around the rudder post.

Water in the after engine room and generator rooms 1 and 3 is the result of seepage through sea valves.

Tank No. 9 has flooded through a sea valve that has apparently been jarred open by the test.

(c) List of compartments believed to have flooded slowly so as to be susceptible to damage control.

All seepage is considered to be normal for this ship so the flooding in the steering engine room, after engine room, and generator rooms 1 and 3 is definitely subject to damage control.

M. Ventilation, (exclusive of blowers).

No damage.

N. Ship Control.

(a) Damage to ship control stations and causes.

None.

O. Fire Control.

(a) Damage to fire control stations and causes.

1. Directors and elevated control positions.

No damage.

2. Plot rooms and protected spaces.

No damage.

(b) List of stations having insufficient protection and estimated effect on fighting efficiency of the loss of each.

None.

(c) Constructive criticism of location and arrangement of stations.

No comment.

P. Ammunition Behavior.

(a) Ready service ammunition, location, protection, behavior under heat and blast.

Satisfactory.

(b) Magazines, location, protection, forces involved, behavior.

Satisfactory.

(c) List of stowages which are insufficiently protected and effects on ship survival of explosion of each stowage.

None.

(d) Behavior of gasoline stowage facilities.

No gasoline aboard.

Q. Ammunition Handling.

(a) Condition and operability of ammunition handling devices.

No damage.

(b) Evidences that any ammunition handling devices contributed to passing of heat, fire, blast or flooding water.

None.

(c) Constructive criticism of design and construction of ammunition handling devices.

No comment.

(d) Constructive criticism of ship control systems.

Ship control is impaired only by radioactive hazards to personnel. Complete cover for ship control personnel is indicated.

R. Strength.

No damage.

S. Miscellaneous.

(a) Evidence of heat damage variations under various colors of camouflage painting.

Not Applicable.

(b) Etc., other miscellaneous effects or conditions noted during inspection.

None.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding sources.

Generator room #1 and the after engine room were flooded to a depth of about 3-1/2 feet, generator room #3 was flooded to a depth of about 2-1/2 feet. This flooding came from the numerous already existing leaks during the prolonged absence of the crew, and could have been prevented if the crew had been aboard. Twenty-two electric motors were grounded out by this flooding, which is not considered to have been caused by Test B. Two tanks were flooded in Section IX (about midship). The ship had a list of about 1-1/2° to starboard after Test B.

(b) Structural damage.

No comment.

(c) Other damage.

There was no damage to machinery of this vessel during Test B. A number of auxiliaries were operated after the test.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence in machinery spaces.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery and ship control.

None.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None below decks except for radioactivity.

(e) Total effect on fighting efficiency.

None, except for possible effects of radioactivity.

IV. General Summary.

The PRINZ EUGEN was outside the effective range of the explosion during Test B, except for possible effects of radioactivity.

V. Preliminary Recommendation.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. **General Description of Machinery Damage.**

(a) Overall condition.

Generator room #1 was flooded about 3-1/2 feet, generator room #3 was flooded about 2-1/2 feet, and engine room #1 (aft) was flooded about 3-1/2 feet. Two tanks were flooded in Section IX (about amidship) and the ship had a list of about 1-1/2° to starboard. The flooding caused the grounding of 22 electric motors. Flooding in machinery spaces came from the numerous already existing leaks during the lengthy absence of the crew. Test B is considered to have had no effect on the overall condition of the plant.

(b) Areas of major damage.

There was no area of major damage.

(c) Primary cause of damage in each area of major damage.

There was no primary damage.

(d) Effect of target test on overall operation of machinery plant.

Test B had no apparent effect on overall operation of the machinery. A number of units were operated after Test B.

B. Boilers.

No apparent damage.

C. Blowers.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Propulsion Machinery.

No apparent damage.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

No apparent damage.

K. Pumps.

No apparent damage. Most of the electric driven pumps were operated and tested at designed pressure.

L. Auxiliary Generators (Turbines and Gears).

No apparent damage.

M. Propellers.

Apparently undamaged. The propellers were inspected from the water surface and appear to be undamaged.

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

Undamaged. The refrigerating plant was tested and operated satisfactorily.

P. Winches, Windlasses, and Capstans.

Undamaged. The anchor windlass was operated by power after Test B. Performance was normal.

Q. Steering Engine.

Undamaged. The steering gear was operated by power from hardover to hardover subsequent to Test B.

R. Elevators, Ammunition Hoists, etc..

No apparent damage.

S. Ventilation (Machinery).

Apparently undamaged. Several ventilation blowers were operated and performed normally.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

Undamaged. Three of the ship's diesel generators were operated satisfactorily after Test B.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

Apparently undamaged. The machine shop, laundry and galley equipment appear to be intact.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

Drafts or list were not observed. There was no flooding in the #1 generator room, the #3 generator room, the after engine room and the steering engine room as a result of normal leakage in the ten day period before the vessel was reboarded.

(b) Structural damage.

None observed.

(c) Other damage.

Twenty seven electric motors were grounded as a result of the flooding. There was no other electrical damage reported.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat.

(b) Fires and explosions.

There was no evidence of fires or explosions.

(c) Shock.

There was no evidence of shock.

(2) Pressure.

There was no evidence of pressure on electric equipment.

(e) Any effects apparently peculiar to the atom bomb.

There were no effects noted that are considered peculiar to the atom bomb except radioactivity.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

There was no effect on electrical equipment or ship control except as a result of the flooding due to normal leakage.

(b) Effect on gunnery and fire control.

None.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

There was no effect on personnel or habitability as a result of this test except for radioactivity. It is considered, however, that personnel would have been seriously affected by the radioactivity. This is evidenced by the fact that the vessel was declared unsafe for personnel more than three weeks after the bomb explosion had occurred.

(e) Total effect on fighting efficiency.

Providing there were no personnel casualties due to radiological effects, it is considered that there would have been no effect on the fighting efficiency of the vessel.

IV. General Summary of Observers' Impressions and Conclusions.

The distance of this vessel from the center of the blast is considered to be too great for electrical damage to result.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

None.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

There was no electrical damage to this vessel as a direct result of the underwater atomic bomb test. In the ten day period before the vessel was reboarded, the following flooding occurred due to normal leakage:

1. #1 generator room (Ewerk 1) flooded to a depth of approximately 4 2 inches.

2. #3 generator room (Ewerk 3) flooded to a depth of approximately 36 inches.

3. The after engine room flooded to a depth of approximately 36 inches.

As a result of this flooding twenty seven electric motors were grounded and had to be baked out before they could be operated.

(b) Areas of major damage.

The electrical equipment on this vessel received no damage as a direct result of the test. The damage received as a result of normal leakage was in the #1 and #3 generator rooms and in the after engine room.

(c) Primary causes of damage in each area of major damage.

Flooding was the primary cause of electrical damage to this vessel.

(d) Effect of target test on overall operation of electric plant.

The target test had no effect on the overall operation

of the electric plant except that it kept personnel off the vessel so that the plant could not be operated.

(e) Types of equipment most affected.

No electrical equipment was affected as a direct result of the test. Motors were most affected by the subsequent flooding.

B. Electric Propulsion Rotating Equipment.

Not Applicable.

C. Electric Propulsion Control Equipment.

Not Applicable.

D. Generators - Ships Service.

No damage.

E. Generators - Emergency.

No damage.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not Applicable.

J. Electric Heating.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

Twenty seven motors located in the #1 and #3 generator rooms and in the after engine room were grounded as a result of these spaces being flooded. It was necessary to bake these motors out before they could be operated.

L. Lighting Equipment.

No damage.

M. Searchlights.

No damage.

N. Degaussing Equipment.

No damage.

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

No damage.

R. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I.C. and A.C.O. Switchboards.

No damage.

V. F.C. Switchboards.

No damage.

W. Miscellaneous.

No comment.

SECTION IV

PHOTOGRAPHS

TEST BAKER

AB-CR-227-243-59. View from directly ahead.

AB-CR-227-243-60. View from off port bow.

AB-CR-227-243-61. View from off port beam.

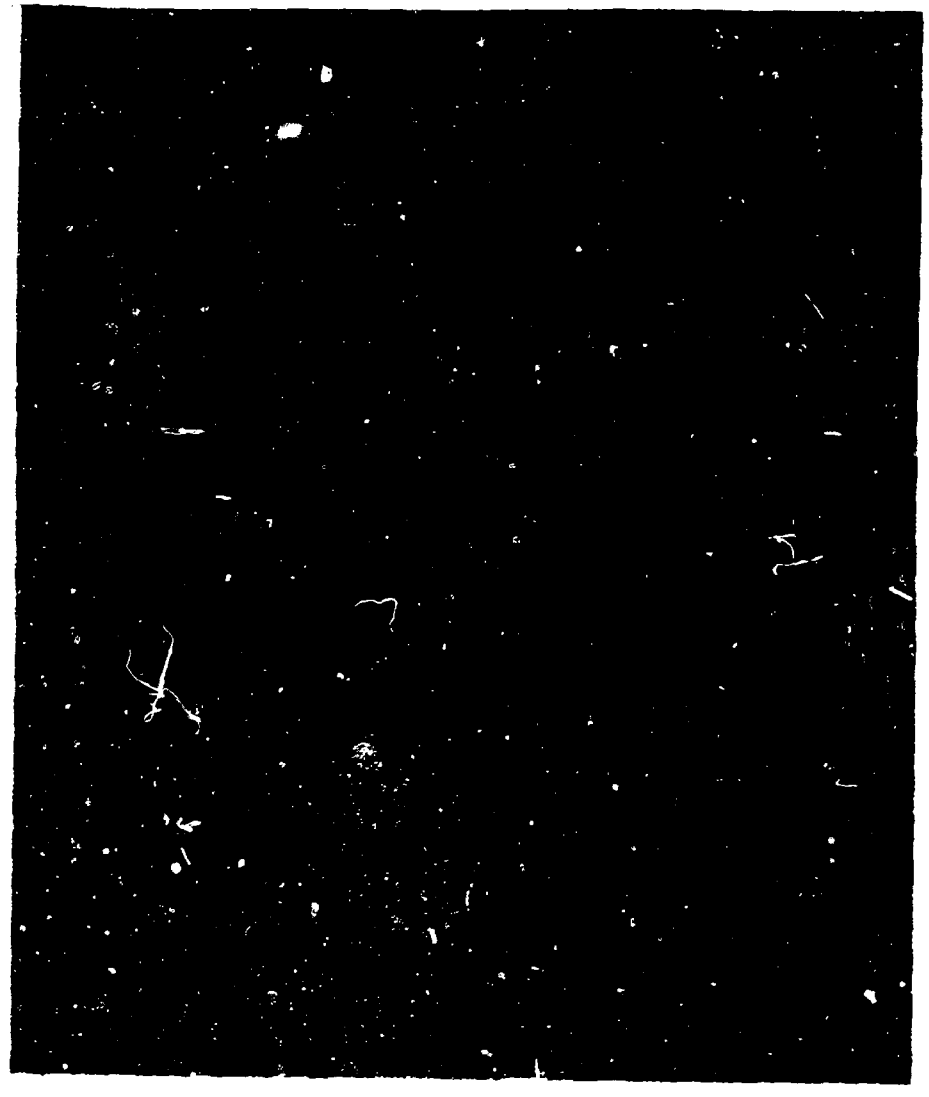
AB-CR-227-243-62. View from off port quarter.

AB-CR-227-243-63. General view from astern.

AB-CR-227-243-64. View from off starboard quarter.

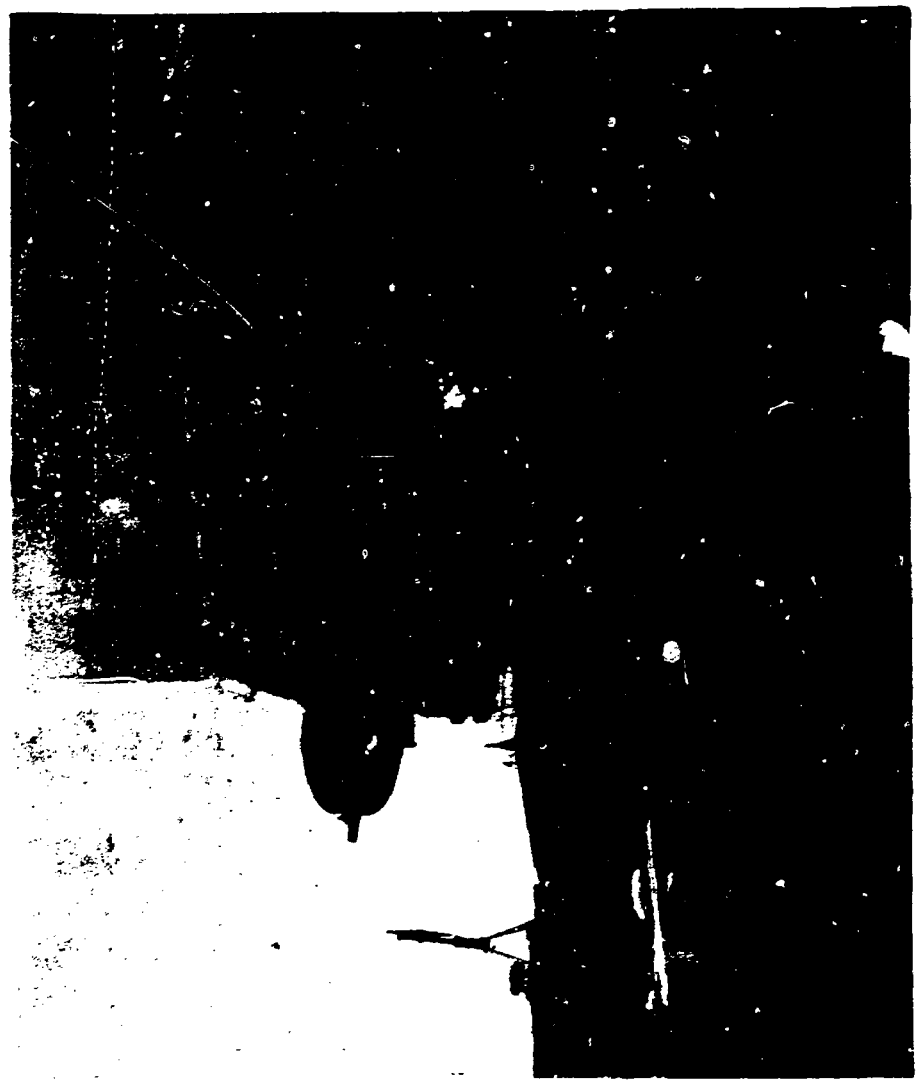
AB-CR-227-243-57. View from off starboard beam.

AB-CR-227-243-58. View from off starboard bow.

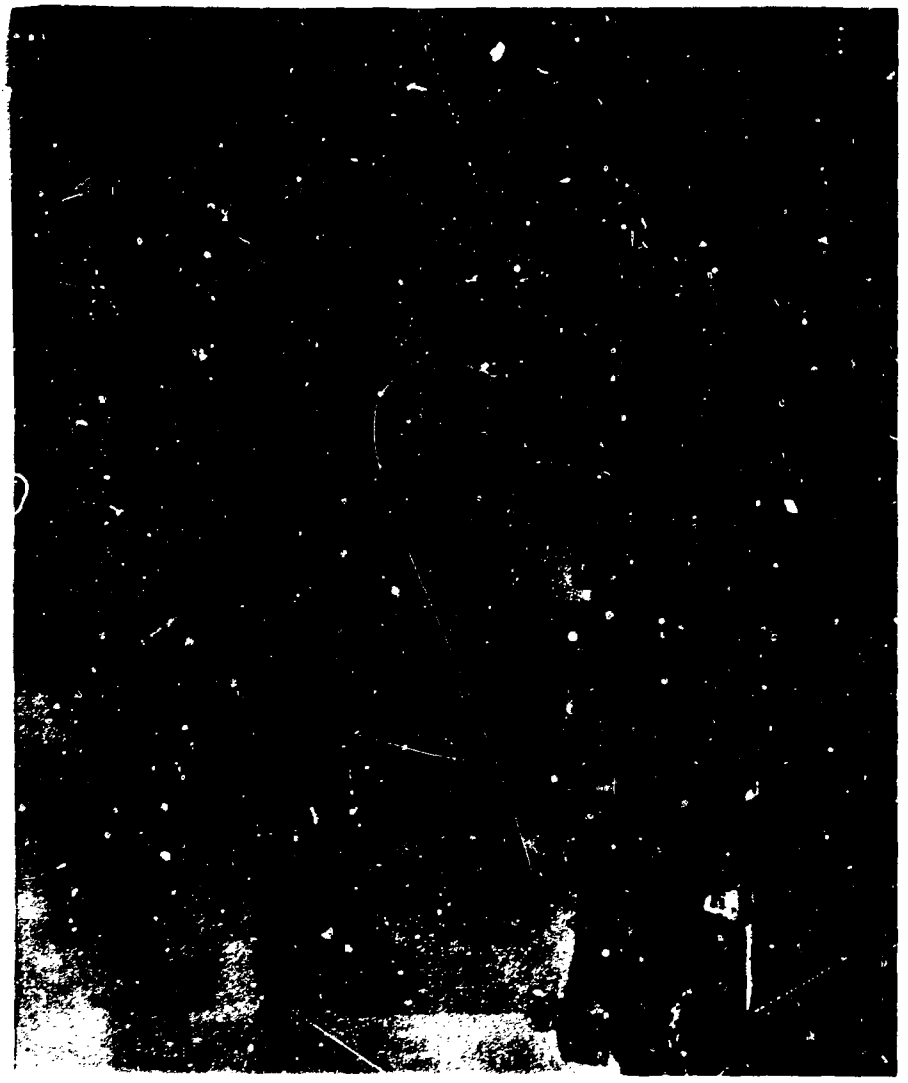


AB-CR-79-2965-3. General view of weatner deck and superstructure from bow.

AB-CR-76-1929-10. Superstructure from off port bow.



AB-CR-59-2999-2. Superstructure from off port beam.



AB-CR-59-2999-5. Superstructure from off port quarter.

AB-CR-79-2965-2. General view of weather deck and superstructure from stern.

AB-CR-59-2999-11. Superstructure from off starboard beam.

AB-CR-175-2182-9. Looking aft along starboard side of steering engine room. Note minor flooding.

APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

REPORT #11

COMMANDING OFFICER'S REPORT

SECTION I

This vessel suffered no material damage as a result of Test B. The ship had a 1° list to starboard due to flooding inherent in the ship due to past operations. This flooding had no relation to Test B and is considered normal for a ten day period.

CAUTION

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ATOMIC WEAPONS INFORMATION

NOTICE

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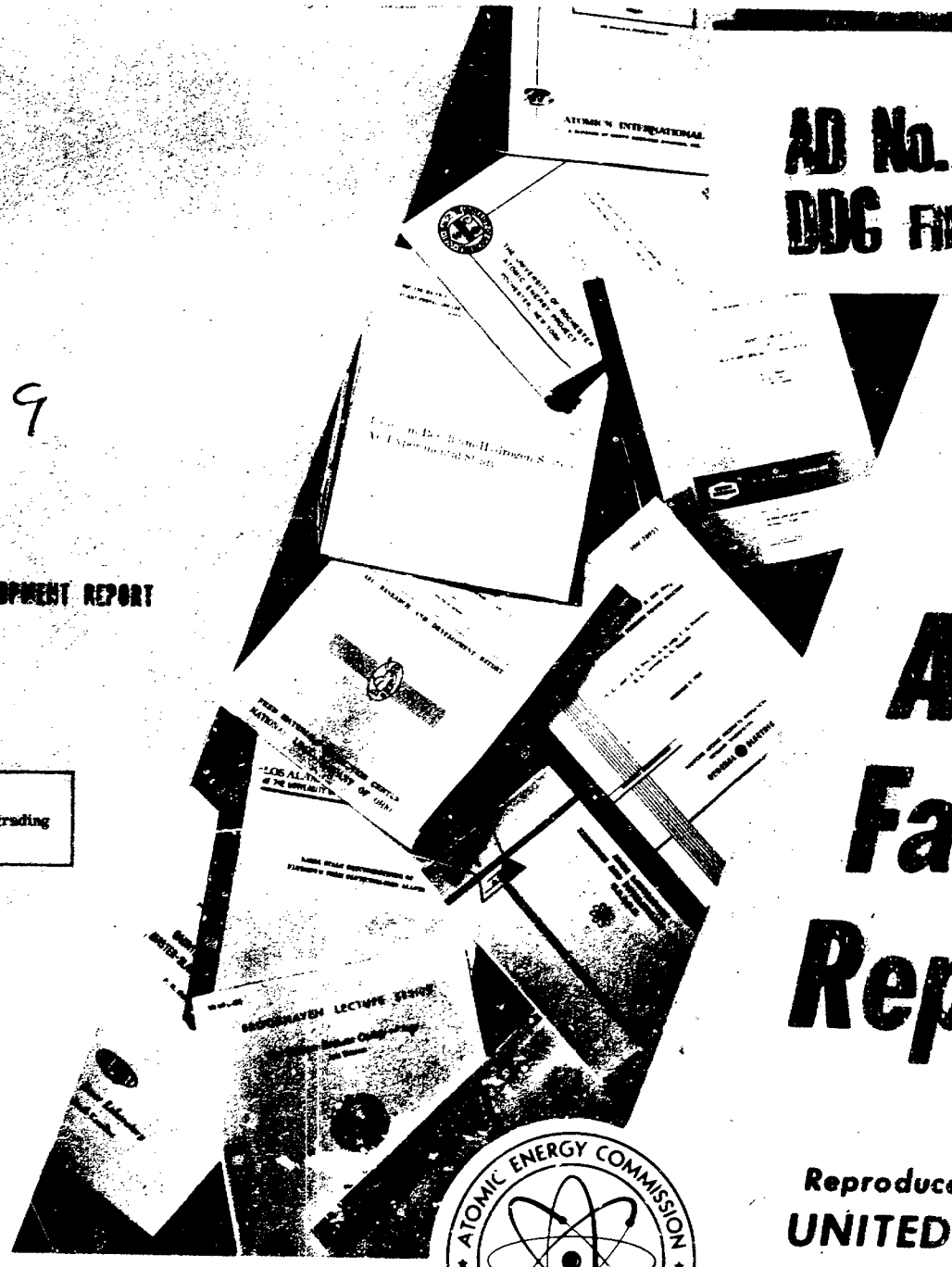

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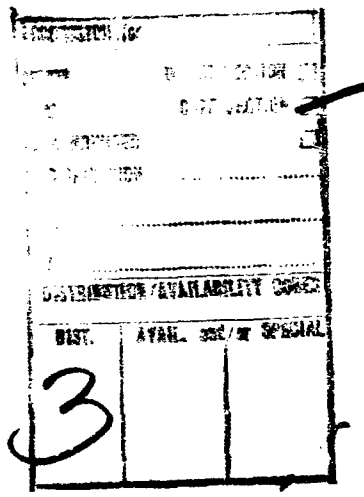

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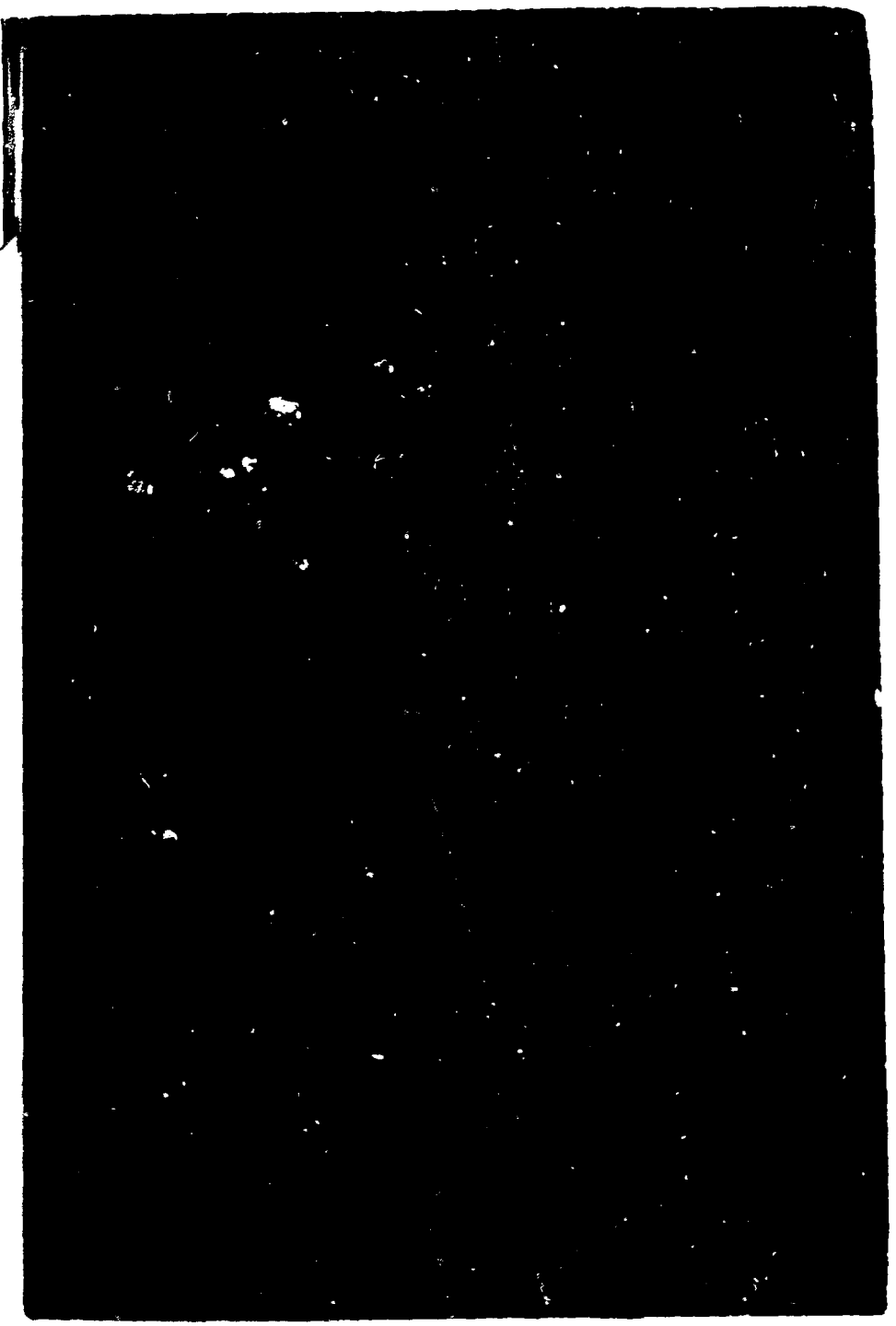

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U.S.S. RALPH TALBOT (DD390)

TEST BAKER

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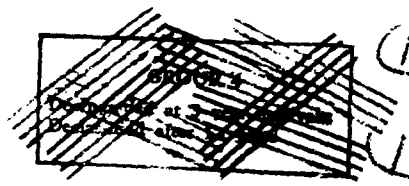

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APPROVED:

F.X. Forest,
Captain, U.S.N.

[redacted]

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USS RALPH TALBOT (DD390)

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[redacted] ATOMIC ENERGY ACT 1946

USS RALPH TALBOT (DD390)

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Conditions after Test.

(a) Drafts after test, general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. When the ship was inspected two weeks after the test, normal leakage was observed in the engine room and sound room.

(b) Structural damage.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

Not observed.

(c) Other damage.

HULL

Not observed.

MACHINERY

None, as far as can be determined by visual inspection.

U.S.S. RALPH TALBOT (DD 390)

SHIP CHARACTERISTICS

Building Yard: Boston Naval Shipyard.

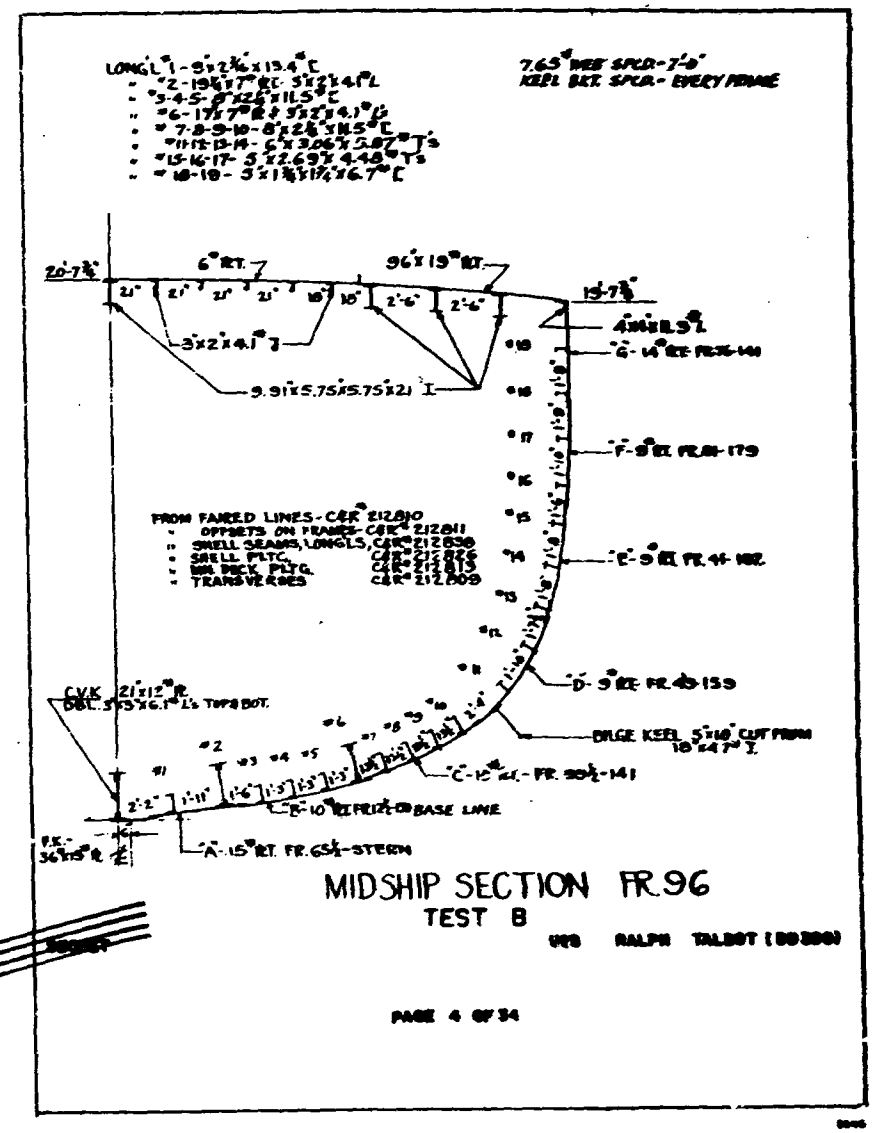
Commissioned: 14 October 1937.

HULL

Length Overall: 341 feet 4 inches.
Length on Waterline: 334 feet 0 inches.
Beam (extreme) 35 feet 6 inches.
Depth (molded at side, to main deck, amidships): 19 feet 7 7/8 inches.
Drafts at time of test: Fwd. 11 feet 6 inches.
Aft. 12 feet 3 inches.
Standard displacement: 1,500 tons.
Displacement at time of test: 2,018 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of G.E. Turbines are installed in ship. One set per shaft.
Reduction Gears: Two sets of double reduction are installed, one per turbine set.
Main Condensers: Two are installed in ship.
Boilers: Four boilers are installed in ship, Type: Babcock and Wilcox and Foster Wheeler. 400 psi - guage - 700° F.
Propellers: Two are installed.
Main Shafts: Two are installed.
Ships Service Generators: Four are installed in ship. Two 132 K.W. - A.C. sets, and two 40 K.W.



ELECTRICAL

There was no damage to electrical equipment from Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

No effects noted.

MACHINERY

No evidence.

ELECTRICAL

No evidence of heat observed.

(b) Fires and explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No fires or explosions.

(c) Shock.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No evidence of shock observed.

(d) Pressure.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

No evidence of pressure observed.

(e) Effects peculiar to the Atomic Bomb.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No effects peculiar to the atom bomb were noted.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

HULL

Not observed.

MACHINERY

None, except for possible effects of radioactivity, insofar as could be determined by visual inspection. No machinery on this vessel was operated or opened for interior inspection after Test B because of radioactivity, which was high when the ship was inspected 15 days after the test.

ELECTRICAL

No effect.

(b) Effect on gunnery and fire control.

HULL

Not observed.

MACHINERY

No comment.

ELECTRICAL

No effect.

(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

No effect from any electrical damage.

(d) Effects on personnel and habitability.

HULL

None.

MACHINERY

None, except radioactivity.

ELECTRICAL

No effect on habitability from electrical damage.

(e) Effect on fighting efficiency.

HULL

Except for the effects of radioactivity, the fighting efficiency of the ship is not affected.

MACHINERY

None, except for radioactivity.

ELECTRICAL

No effect.

IV. General Summary of Observers' Impressions and Conclusions.

HULL

None.

MACHINERY

The RALPH TALBOT was outside the effective range of the explosion in Test B, as far as physical damage to machinery is concerned.

ELECTRICAL

As there was no damage from Test B, no conclusions were formed by the observers.

V. Preliminary Recommendations.

HULL

None.

MACHINERY

None.

ELECTRICAL

No recommendations.

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list. When the ship was inspected two weeks after the test, normal leakage was observed in the engine room and sound room.

(b) Structural damage.

None.

(c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No effects noted.

(b) Fires and explosions.

None.

(c) Shock.

None.

(d) Pressure.

None.

(e) Effects apparently peculiar to the atom bomb.

None.

III. Effects of Damage.

(a) Effect on machinery, electrical and ship control.

Not observed.

(b) Effect on gunnery and fire control.

Not observed.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

None.

(e) Effect on fighting efficiency.

Except for the effects of radioactivity, the fighting efficiency of the ship is not affected.

IV. General Summary of Observers' Impressions and Conclusions.

None.

V. Preliminary General or Specific Recommendations of Inspection Group.

None.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM	LOADING
Fuel Oil	Min.
Diesel Oil	Min.
Ammunition	10%
Potable and reserve feed water	95%
Salt water ballast	350 tons

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the Ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Direction of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

There is no apparent hull damage. Minor normal leakage was noted in the engine room and sound room. Draft readings and list prior to and following the blast were the same. General views of the ship are on pages [illegible] to 32 .

B. Superstructure.

There is no apparent damage to the superstructure.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge Gear.

No damage.

E. Weather Deck.

No damage.

F. Exterior Hull.

No damage.

G. Interior Compartments (above w.l.).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not Applicable.

I. Interior Compartments (below w.l.).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None, as far as can be determined by visual inspection.

II. Forces Evidenced and Effects Noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None, except radioactivity.

III. Effects of Damage.

(a) Effect on machinery and ship control.

None, except for possible effects of radioactivity, insofar as could be determined by visual inspection. No machinery on this vessel was operated or opened for interior inspection after Test B because of radioactivity, which was high when the ship was inspected 15 days after the test.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except radioactivity.

(e) Total effect on fighting efficiency.

None, except for radioactivity.

IV. General Summary.

The RALPH TALBOT was outside the effective range of the explosion in Test B, as far as physical damage to machinery is concerned.

V. Preliminary Recommendations.

None.

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery of this vessel was not changed by Test B, as far as could be determined by visual inspection.

(b) Areas of major damage.

There was no major damage.

(c) Primary cause of damage in each area of major damage.

Not Applicable.

(d) Effect of target test on overall operation of machinery plant.

Test B had, insofar as could be determined by visual inspection, no effect on the overall operation of the machinery plant.

NOTE: No machinery on this vessel was tested or operated after Test B.

B. Boilers.

There is no evidence of damage to the boilers, stack, or uptakes, insofar as could be determined by visual inspection.

C. Blowers.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

F. Main Propulsion Machinery.

The engines were trammed and found to still be in alignment. There was no apparent damage sustained as a result of the test.

G. Reduction Gears.

No apparent damage.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

No apparent damage.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbines and Gears).

No apparent damage.

M. Propellers.

The propellers were not visible from the surface of water and were not inspected. Considering the lack of damage to the ship as a whole they are believed to be undamaged.

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

No apparent damage.

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

The diesel generator was inoperative prior to the test. The engine was examined and found to have sustained no apparent damage from Test B.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test, list, general areas of flooding sources.

Not observed.

(b) Structural damage.

Not observed.

(c) Damage.

There was no damage to electrical equipment from test Baker.

II. Forces Evident and Effects Noted:

(a) Heat.

No evidence of heat observed.

(b) Fires and explosions.

No fires or explosions.

(c) Shock.

No evidence of shock observed.

(d) Pressure.

No evidence of pressure observed.

(e) Any effects apparently peculiar to the atom bomb.

No effects peculiar to the atom bomb were noted.

III. Effects of Damage.

(a) Effect on electrical equipment and ship control.

No effect.

(b) Effect on gunnery and fire control.

No effect.

(c) Effect on water-tight integrity and stability.

No effect from any electrical damage.

(d) Effect on personnel and habitability.

No effect on habitability from electrical damage.

(e) Total effect on fighting efficiency.

No effect.

IV. General Summary of Observers Impressions and Conclusions.

As there was no damage from test Baker, no conclusions were formed by the observers.

V. Any Preliminary General or Specific Recommendations of the Inspecting Group.

No recommendations.

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall Condition.

The overall condition of the vessel was uncharged.

(b) Areas of Major damage.

No damage.

(c) Primary causes of damage in each area of major damage.

No damage was sustained from test B.

(d) The effects of target test on overall operation of the electric plant.

1. Ship's service generators - not affected.
2. Engine and boiler auxiliaries - not affected.
3. Electric propulsion - not applicable.
4. Communications - not affected.
5. Fire control circuits - not affected.
6. Ventilation - not effected.
7. Lighting - not effected.

(e) Types of equipment most effected.

No electrical equipment damaged from test B.

B. Electric Propulsion Rotating Equipment.

Not applicable.

C. Electric Propulsion control Equipment.

Not applicable.

D. Ship's Service Generators.

Not damaged.

E. Emergency Generators.

Not damaged.

F. Switchboards and Distribution Panels.

Not damaged.

G. Wiring, Wiring Equipment and Wireways.

Not damaged.

H. Transformers.

Not damaged.

I. Submarine Propelling Batteries.

Not applicable.

J. Portable Batteries.

Not damaged.

K. Motors, Motor-Generator sets and Motro Controllers.

Not damaged.

L. Lighting Equipment.

Not damaged.

M. Searchlights.

Not damaged.

N. Degaussing Equipment.

Not damaged.

O. Gyro Compass Equipment.

Not damaged.

P. Sound Powered Telephones.

Not damaged.

Q. Ship's Service Telephones.

Not applicable.

R. Announcing Systems.

Not damaged.

S. Telegraphs.

Not damaged.

T. Indicating Systems.

Not damaged.

U. I.C. and A.C.O. Switchboards.

Not damaged.

V. F.C. Switchboards.

Not damaged.

SECTION IV

PHOTOGRAPHS

TEST BAKER

BB-CR-227-513-52. Port beam before Test B.

AB-CR-227-243-17. Port beam after Test B.

BB-CR-227-513-48. Starboard beam before Test B.

AB-CR-227-243-24. Starboard beam after Test B.

8045

APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

COMMANDING OFFICERS REPORT

REPORT # 5

On 5 August 1946 the Commanding Officer and working party assisted ATF 100 in spraying the RALPH TALBOT with decontamination compound. After removal of compound it was found that radioactivity had been reduced about 20% in areas where readings were over 1.2R/day. Areas which read less that .9 R/day were affected very little.

At 0900 on 9 August 1946, the Commanding Officer reboarded the RALPH TALBOT with Department heads, key ratings, and a DSM team for a quick inspection of the entire ship. Topside areas were monitored and found to average about five hours tolerance. Engineering spaces, clear of the hull, were safe. The firerooms had seven to twelve hour tolerances, and the superstructure decks showed an average of two hour tolerance.

There was no flooding in any space, and no change in draft since the last check on B minus one day. The ship was on an even keel, and no visible damage of any type was noted, No power was available to test equipment electrically but all units operated normally in manual.

All ammunition topside and below decks was intact. Depth charges were undamaged. There was no evidence of fire, heat, or explosions on board, and no evidence of wave or water damage.

All electrical circuits, fresh water lines, fuel systems, and tanks were intact. Boilers suffered no damage. The shock wave had no visible effect on the underwater hull; and all plating, frames, and bulkheads appear intact.

Except for the persistence of radioactivity topside and on the skin of the ship, the RALPH TALBOT suffered no damage as a result of the B Test.

CAUTION

This Document Contains
ATOMIC WEAPONS INFORMATION

NOTICE

This document contains atomic weapons information. Distribution is limited to recipients authorized by the Defense Atomic Support Agency (DOD) and/or the Division of Military Application (AEC)

Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

AD-366588	XRD-203-Section 12
AD-366589	XRD-200-Section 9
AD-366590	XRD-204-Section 13
AD-366591	XRD-183
AD-366586	XRD-201-Section 10
AD-367487	XRD-131-Volume 2
AD-367516	XRD-143
AD-367493	XRD-142
AD-801410L	XRD-138
AD-376831L	XRD-83
AD-366759	XRD-80
AD-376830L	XRD-79
AD-376828L	XRD-76
AD-367464	XRD-106
AD-801404L	XRD-105-Volume 1
AD-367459	XRD-100

TRC 18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Ardith Jarrett

ARDITH JARRETT
Chief, Technical Resource Center